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CHARACTER IN ARCHITECTURE.

UNLIKE unity of effect, which demands that similar and consistent treatment shall be applied throughout large masses of building, character in architecture may express itself in a single structure, in groups of buildings, or even in isolated features, and is interesting in proportion to its own intensity, independent of the extent of material involved. Character implies, indeed, a certain variety of effect, and is a relative quality appealing to our faculty of comparison.

A fragment of Grecian echinus moulding, with its varied curvature of outline, when compared with the more commonplace round of the Roman ovolo, exhibits the intense difference of character to be seen in the two forms of classic art in which our own architecture originates. Greek work, full of elegance and perfect finish, the result of critical attention, thought, and experiment, contrasts itself with Roman magnificence, mass, and profusion, where largeness of scale is substituted for contrasted subordination of parts, and plastic richness for minute precision of ornament. In these great contrasts of national character differences due to climate and material circumstances and habits of life and thought combine to produce dissimilarity of character in the architectural forms. Practical considerations of transport limit the supply of marble to Rome, and when that city underwent its historical transformation from brick to marble the plastic forms suitable for erection in brick and mortar had already determined the composite character of Roman building. Thenceforth Roman work most frequently consists of a shell of arcuated construction with ornamental additions of marble plating, to which some elements of Grecian trabeated style were sometimes added in a rather inconsequent fashion.

These borrowings of Grecian detail certainly give character to Roman work, but it is of a nature entirely opposite to that of the original, where attention was concentrated upon the perfection of few parts instead of upon the introduction of fashionable novelties and their super-addition to the surface of the walls. Greece, with its mountains of fine marble, had no reason to deviate from the use of that material in great blocks and beams, a necessary condition for the development of her megalithic type of architecture, and this abundance of material permitted of the retention of that style during a period of time sufficient for the attainment of its most exquisite manifestations in sculptured forms of crystalline precision. Opinions differ as to the propriety of Grecian revival at the present day in a climate like ours, and among conditions essentially different from those of ancient Greece, but men gifted with sensitive appreciation of a perfect style can hardly be blamed for attempting the impossible, nor is it altogether their fault if a modern imitation of Greek style in the British Isles becomes accidentally endowed with a quality far more British than Grecian. Neither the Doric pylon at Euston Station nor the Caryatide porch of St. Pancras Church recalls in the slightest degree the smiling and gracious character of the marble architecture of the Athenian Acropolis. They have, on the contrary, a somewhat severe and frigid air, and the works of the Neo-Grec style labour under the disadvantage of this sombre character. Emigrants from the sunny lands, they do not take kindly to the mantle of soot which serves our architecture in place of colour decoration.

Buildings exhibiting far less purity of style may prove more suitable to their surroundings. It would be difficult to differentiate the part played by accident from that of conscious design in the production of the far more urbane character recognisable in the work of Sir Christopher Wren. Influenced by the study of contemporary work in France, and containing much more of Roman than of Greek tradition, it has a character of its own derived from national, individual, and even merely fashionable sources, for the revival of Classic art was to a very great extent a fashionable movement. Some critics discover in Wren's buildings evidence of scholarship without pedantry, and of the amiable and well-balanced character of their great designer. Others complain of a lack of refinement or purity of detail, but what is a drawback from the point of view of exact study or of abstract artistry may be a contribution to the harmonious expression of character. In times of cosmopolitan intercourse it is virtually impossible to practise a great and necessary art like architecture in a confined and restricted fashion. Wren's escape from the minutiæ of the pedants, his frank gathering up and mingling of elements of different origin, Gothic and Classic, the combination of architectural and structural devices, resulted in designs whose character is attuned to the complex character of modern life.

Professor C. H. Reilly, in analysing the character of some Liverpool buildings, says of the Dock Board offices, with their prominent dome: "Such a building should, of course, have a central site. A great dome raised on a drum should always mark a focal point in the city's plan, and should be reserved for its most important building." In Wren's own town-planning scheme for the rebuilding of London, St. Paul's Cathedral would have fulfilled these conditions, and even now, in spite of the lack of space about the building, its central and dominating character is maintained by its position on the top of a rise in the ground and by its own great height and majestic contour. But it is not only monumental architecture that has a character of its own. Commercial and domestic buildings have equally great possibilities in this regard, and when erected in a period possessed of a firm tradition the character of lesser buildings is as definite and as interesting as that of larger works.

Unfortunately the changes of ownership or tenancy may involve changes for the worse in the character of a building. Nothing has been more common of late years than the substitution of large sheets of plate glass for the smaller panes of crown glass which gave scale and interest to street fronts severely plain in other respects. Sash bars have an important colour value, and their removal or their repainting in dark tones can suffice to destroy the whole character of the architecture, transforming the window into a dismal cavern in the midst of the brick surface of the wall. Properly managed, with a cream-coloured surrounding frame and bars, the dark colour of the glass adds piquancy and emphasis to the adjoining half tones of wall surface, just as the borders of a Persian rug give tone by contrast to its central panel and to the plain expanse of surrounding floor. Somerset House, for instance, could be made more consistently cheerful in character by the use of light instead of dark paint on the window bars and frames of the courtyard fronts, where the stonework has been left a grey monotone. Against a background of light-coloured wall, dark frames are not so inappropriate, although in that case the colour scheme is at its best only when the glass reflects light, and sparkles in the charming manner familiar in old house fronts where the crown glass is retained. The stonework of the river front of Somerset House, more freely exposed to the weather, has bleached to a sparkling white, and shares with the work of Wren a generosity of effect adapted to its position in our capital city.

NOTES.

Unification and Registration

Amongst the problems of the day which architects have to consider, that dealing with the status and privileges of the architectural profession has lately claimed a good deal of attention, and the adoption of some means for unifying the whole profession has been widely advocated. The adoption of registration has been also extensively advocated, perhaps more generally in the provinces than in London. In fact registration has been so much and so long in the air that we found a writer the other day saying "we are all in favour of registration." To be just we must admit there is a number of able men who do not subscribe to that, and who doubt whether registration is a good thing. However, the profession as a whole, or at least a large part of it, seems anxious to have registration. But, as our readers are aware, a keen controversy has arisen as to whether we shall seek unification or registration first. Mr. Maurice Webb, in his paper before the Liverpool Architectural Society on Tuesday of last week, is a whole-hearted advocate of unification, and of unification first. He urges that if registration is voluntary, as is now proposed by the Unification Committee, it could obviously only be obtained by a united effort, whilst if it were compulsory under Act of Parliament surely it is obvious that unity is even more necessary than ever to persuade Parliament to grant registration. He also pointed out that we already have unification to a large extent, for the Institute can practically ban all badly-arranged competitions, and the Board of Architectural Education exercises a very definite control over all schools of architecture. Thus in regard to competitions and education we have practically got unification.

Education.

Dealing with the subject of education, Mr. Webb pointed out the great value of the architectural schools. He said that in trusting to the schools instead of its own Institute examinations to qualify for practice the architectural profession was, he believed, alone of all the great professions, but the result must, in his opinion, be of great good to the art of architecture in the country by opening up a wider field for the initiative of the professors and teachers in the schools, and freeing them from the restrictive influence which examinations of necessity imposed. He further pointed out that the present generation of young architects already valued the diplomas they had received from their schools far more highly than the letters A.R.I.B.A. He thought that in a short time the public would do so too. We wonder if a belief in this argument would tone down the opposition of the Associates of the Institute to the fear of equality of status amongst all who come into a unification scheme.

Sculpture and Architecture.

Mr. Gilbert Bayes' paper concerning the treatment of sculpture in architecture, read to the Architectural Association on Monday night, raised many points of interest. Mr. Bayes laid stress upon the equal futility of living entirely in the past or of going to the other extreme and producing work that resembles nothing in Nature or anywhere else. In emphasising the importance of embodying the spirit of the time in any given work, he suggested that 95 per cent. of tradition might be seasoned with 5 per cent. of the present day. Most architects will probably agree with the corollary: that we have been surfeited with the Classical orders, and that architecture should be simplified to produce a twentieth-century style, based on tradition but embodying amendments dictated by our requirements and by the nature of our materials. The architecture and sculpture on any given building should be treated as parts of one whole, because thus only can we avoid the appearance that the sculpture has been pushed in as a kind of subsequent decoration.

The Setting for Sculpture.

Mr. Bayes, in illustrating the importance of surroundings, referred to the statue of Sir Henry Irving behind the National Portrait Gallery, which stands on a large triangular expanse of useless pavement—a legacy from the Victorian epoch, when pavements appear to have been regarded as desirable ends in themselves; he pointed out the advantages that would result from turning the triangle into a little garden,

Design for a Village Sign. By Mr. G. Berkeley Wills, A.R.I.B.A.

of which the statue would be the centre of interest. We should like to commend this proposal to the authorities concerned. Treatment of this kind, in suitable places, would go a long way towards brightening London and giving our sculpture some chance of being seen to advantage. The question of using colour schemes upon sculpture and architecture was discussed; but, as Mr. Manning Robertson pointed out in the discussion, until we can get rid of our smoke and soot we can hardly look forward to any permanent improvement of our towns in this direction. At present the finest brickwork becomes a dirty brown in a few years, and the same fate will befall any other attempt at the introduction of colour on a large scale.

Latest Housing Costs. The phrase, "Houses for Heroes," was a catchword in the early phases of the present housing movement, the impetus of which has died away in the light of cold finance. The blunders which accompanied this early frenzy are now being fully realised, and we are able now partly to realise that the way to meet a housing shortage is not to build houses! At all events, now that most of the great housing schemes have been cut off, Sir Alfred Mond is able to state that a tender has been received of £380, for a house with three bedrooms, a parlour, and a kitchen, which at the height of the housing energy would most likely have been £1,100. In one way our recent housing experience has been beneficial in that it has indicated a higher standard of building what might be fit houses for heroes.

Encouragement of Art. It is reported that the number of works sent into the Royal Academy is 14,000, of which about 1,000 will be hung. Is the product that we now call art, which is produced in such enormous quantities as these figures denote, a sign of the admirable results of State encouragement of art, or of the disaster lying in it? We remember to have heard a good artist, of whom a young man was asking advice, reply in the following terms: "Don't think of taking up art as a profession if you can possibly avoid it." It meant to convey that only when the impulse was overmastering were there likely to be results to vindicate such a perilous course. Even if this seems an extreme statement, the enormous output of activity which has hardly any economic value is one that should lead us to consider whether the fostering of art by the State should not be reconsidered. The encouragement of art by the State always reacts against the artist, because it accustoms the nation to an inferior product, in fact normalises bad art; so that the public do not know their right hand from their left when they come to judge it.

Inter-Banks Chess Championship Trophy.
(*See p.* 470.)
Designed by Messrs. Cheadle & Harding

Old Established Building Firms. A correspondent writes:—"As a regular reader of *The Builder* of many years' standing, I noted that last week you reported a claim for a firm in London, *i.e.*, Messrs. Munday & Sons, Ltd., which was established in 1710, that it was probably the oldest in the country. I enclose you the business card of Mr. Elliott, who is a member of the Mid-Northumberland Builders' Federation, and a memo. from Mr. Thomas Bertram, of Earsdon, which I think will be of interest to you. Both firms have been handed down from father to son. Mr. Bertram is a prominent member of the Newcastle Builders' Federation and is Vice-Chairman of the Tyne and Blyth Regional Federation." The enclosures from our correspondent are, as he says, of much interest. Messrs. J. P. Bertram & Son appear to have been established in 1597, which gives them a distinct claim to seniority over Messrs. Munday; but the claim made for Messrs. Elliott Brothers is nearly 200 years earlier, *i.e.*, 1400, which will probably give them the distinction of being the oldest building firm in the land, though we shall be glad to give prominence to any earlier claims. The pleasing part about all these old-established firms is that they are handed down from father to son.

Conditions of Contract. The Councils of the Royal Institute of British Architects, the Institute of Builders and the National Federation of Building Trades' Employers of Great Britain and Ireland are informing their members that until the National Standard Form of Conditions of Contract is agreed, the Conditions of Contract, dated October, 1909, issued under the sanction of the R.I.B.A., in agreement with the Institute of Builders and the National Federation, is temporarily the form approved by these bodies.

Museum Economies. The decision "in the interests of economy" to close the Library at the Victoria and Albert Museum on the three evenings of the week that it has hitherto remained open is a serious loss to craftsmen, who find their facilities for study and information thus very much cut off. It is mostly after working hours that the craftsman is free enough to visit the Museum, so that he will in the future be largely precluded from making use of it. Nor does the arrangement quite justify itself on the plea of economy, because everything that facilitates production at a time when the need of it is so great is to be desired. At a time of financial stress like the present it is important to keep open facilities so important to craftsmen.

Giles Gilbert Scott, R.A. It is given to few to complete so much of high quality as is found in the record of Mr. Giles Gilbert Scott, who has been made an R.A. at the age of 42. Architects will all feel that the honour has been worthily bestowed. The success of Mr. Scott in the competition for the Liverpool Cathedral was not perhaps surprising to those who knew him, but even they could hardly have foreseen how his triumph on paper was going to be followed up by such fine work as he produced in the carrying out of this design, as well as in other notable cases. What he has accomplished is further proof of the value of tradition, inherited instinct, and training. Mr. George Gilbert Scott was a scholarly and accomplished architect and writer, but it is doubtful whether he was endowed with all that was necessary to produce the work that stands to the credit of his son. The new R.A. has already shown that English architecture is a living force and that our fine inheritance from the Middle Ages is still alive. How far an appreciation of classic art has combined with the Gothic intention in the Liverpool Cathedral we dare say its author will some day tell us, but the creation of the design of the Liverpool Cathedral at the age of 22 is proof enough of the old saying that the artist is born and not made.

GENERAL NEWS.

Professional Announcements.

Messrs. J. Hatchard-Smith & Son, F.R.I.B.A., have removed to No. 11, Haymarket, S.W., the lease of their offices at No. 6, Duke-street, Adelphi, W.C., having expired.

Mr. S. Gordon Jeeves, M.S.A., has removed his practice to 4, George-street, Hanover-square, W. 1, his partnership with Mr. A. E. Bullock having been dissolved.

Messrs. Reid & Bilbow, architects, have removed to 44, Bedford-row, W.C.1. (Telephone, Chancery 7058.)

Mr. Chas. W. Latter, F.S.I., has removed from 44, Bedford-row to 43, Doughty-street, W.C.1. (Telephone, Museum 6537.)

The Society of Arts' Premises.

The freehold of the Adam house in John-street, Adelphi, which has been the home of the Society of Arts for a century and a half, has been purchased by the Society. The house was built by the Brothers Adam to the order of the Society, and we understand the Society now intends to restore the interior of the building, so far as possible, to the condition in which it was left by the architects.

Archæology in Surrey.

The Ordnance Survey Department has decided to correct and amplify the archæological information contained in the maps of the department as they come up for revision from time to time. To facilitate this work in Surrey a Committee has been appointed by the Surrey Archæological Society and Croydon Natural History and Scientific Society to carry out an archæological survey of the county on lines proposed by the Department.

Obituary.

Mr. E. A. Walton, R.S.A., of Edinburgh, President of the Royal Scottish Society of Painters in Water-Colours, died on Saturday last, at the age of sixty-two years.

The death has taken place of Mr. Charles E. Waring, F.S.I., architect and surveyor, and a prominent figure in the civic life of Cardiff, at the age of sixty-three.

The death has occurred, at the age of eighty-seven, of Mr. Rees Jones, for over forty years Borough Surveyor of Aberystwyth.

Digestor Bricks for Canada.

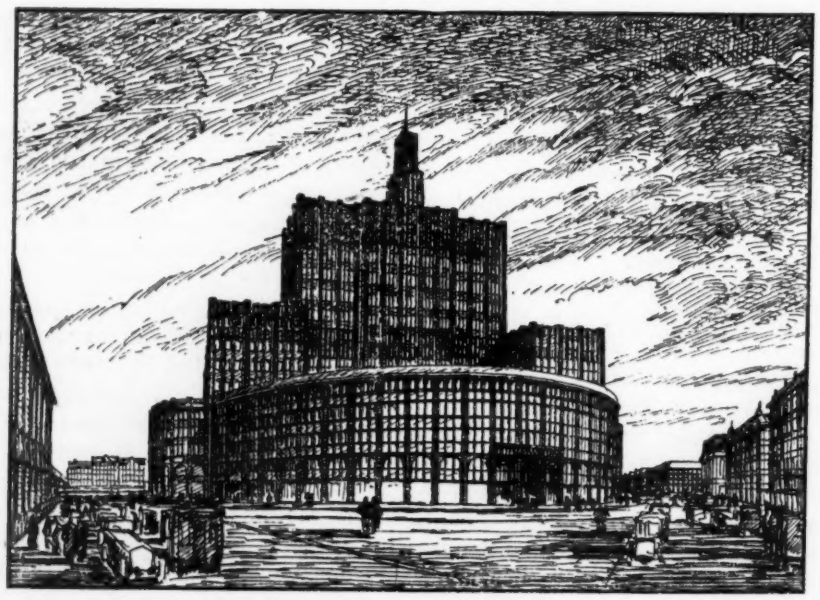
H.M. Senior Trade Commissioner in Canada and Newfoundland (Mr. G. T. Milne, O.B.E.) has been approached by a Montreal company regarding their desire to get into touch with United Kingdom manufacturers of "digestor bricks." It is understood that these bricks are used in considerable quantities in Canada in pulp and paper mills, and the applicants believe they can be satisfactorily supplied from the United Kingdom. Two samples of the types of brick in use, the dimensions of which are approximately 8 by 6 by 2½ and 10 by 8 by 2½ inches respectively, are available at the Department of Overseas Trade (35, Old Queen-street, S.W.1) and may be seen on application to Mr. Kelly (Room 41).

A Colchester War Memorial.

A memorial tablet and warriors' chapel were unveiled at the Church of St. Mary-at-the-Walls, Colchester, on March 26. Both were designed by Mr. S. Gambier Parry. The warriors' chapel has been formed out of the south transept of the church, an archway having been made through the old east wall and an apse built out to the east. There is a three-light stone-mullioned and traceried window in the south wall, the figures representing St. Nicholas (patron saint of sailors), St. Michael (for airmen), and St. Oswald (for soldiers). Windows in the apse represent Joan of Arc, and Cornelius, the Centurion, to mark the connection of Colchester with the Roman Empire. There are stone figures of a soldier and a sailor standing with reversed arms in niches on each side of a Gothic arch, these having been carved by Messrs. John Daymond & Son, of London. Messrs. Henry Everett & Son, of Colchester, carried out the building work. The tablet containing the names of the fallen is composed of black Belgian marble, Irish green marble, and English alabaster, both red and white, with gold glass outline.

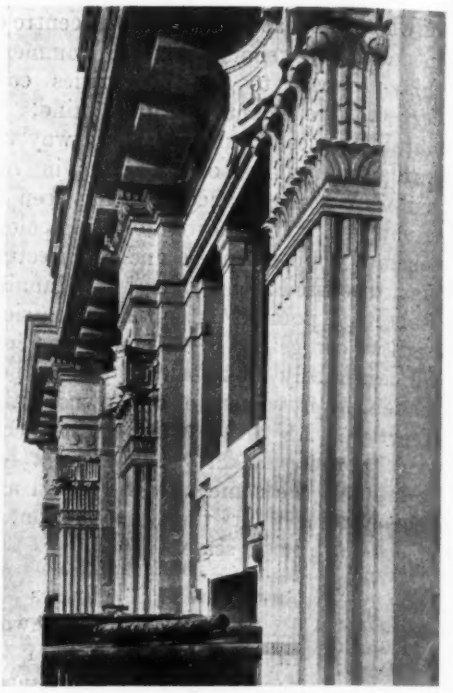
INTER-BANKS CHESS CHAMPIONSHIP TROPHY.

THE cup illustrated on p. 469 is of solid silver, 12 in. high. It stands on a circular ebony plinth surmounted by a plain silver band, on which the names of the winning teams are inscribed. Around the foot of the cup stand four pawns, suggesting the outer line of defence; and around the stem stand the minor pieces, two rooks, two knights, and four bishops. From the centre of this group rises the queen, forming the stem of the cup. The cup itself bears an inscription in engraved lettering, and is surmounted by a detachable cover. The handle of the cover is formed by the king, and this piece crowns the whole. Thus all the chess pieces are represented in battle array—the executive pieces, led by the queen, supporting the king. The cup is the work of Messrs. Vickery, of Regent-street, and is executed to the design of Messrs. Cheadle & Harding, architects, of 2, New square, Lincoln's Inn, W.C.



An Office Building in Germany.

[An illustration of this building was shown by MR. RAYMOND UNWIN at the R.I.B.A. on March 6, in the course of the discussion on the question of higher buildings for London.]



New Premises, Regent Street, for Messrs. Dickins & Jones: Detail of Façade.
MESSRS HENRY TANNER, Architects.
(*See p.* 477.)

COMPETITION NEWS.

Cairo.

In his report on the preliminary competition in the Qasr el Aini Hospital and School Competition, Mr. John W. Simpson (the Assessor) stated that sixty-six sets of drawings were received, from which the authors of Nos. 19, 23, 31, 35, 41, and 49 were invited to take part in the final competition. The names of the authors of these designs were given in our issue for December 23, 1921; the names of the six subsequently invited to take part were given in our last issue.

Society of Architects' Design Competition.

The following have been selected to compete in Part II of the Society of Architects' First Half-Yearly Design Competition (1922):—*Licentiates*: H. S. Dalby (Chester), O. H. Green (Truro), R. H. Shrewsbury (Eccles); *Students*: H. Anderson (Canterbury), S. Bedford (Hove), A. J. Biddulph (Birmingham), C. A. Browne (Birkenhead), L. K. Dyer (Portsmouth), E. K. Rainford (Hoylake), C. G. Vickerman (Huddersfield). Nineteen competitors submitted designs, the subject of which was "The Entrance Gates for the Grounds of a Country House."

Newport.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a cenotaph. Sending-in day, May 1. (See advertisement this week.)

Ipswich.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial. Sending-in day, June 17. (See advertisement this week.)

Henry Saxon Snell Prize.

The Henry Saxon Snell Prize will this year consist of 50 guineas and the medal of the Institute for an essay on "Improvements in the Sanitary Appliances and Fittings for new Housing Schemes, having regard to Efficiency and Economy." Sending-in day, August 31. Further particulars from the Royal Sanitary Institute, 90, Buckingham Palace-road, S.W.1.

Other Competitions.

Other competitions still open include the following (the dates given are, first the sending-in date, and second the issue of *The Builder* in which full particulars were given):—Auckland war memorial (June 30; Sept. 2, 1921); Trujillo (Peru) monument (June; Jan. 13); Colour Competition (May 1; Feb. 17); Dundee war memorial (April 30; Jan. 6); Label Design (April 3; March 24).

CORRESPONDENCE.

R.I.B.A.—Summoning General Meetings.

SIR,—Several members interested in this question have been inquiring from me as to the method of summoning general meetings of the Royal Institute, and as to the length of notice required, and I understand that there has been some correspondence in the professional Press on the point. It may interest your readers to have a statement as to this.

Broadly speaking, there are three ways in which a matter of this kind can be laid before the members of the Royal Institute for consideration:—

(1) The Council can summon a special general meeting for any date they choose, specifying the business to be discussed. They can give the amplest possible notice of such a meeting, and they can call it either on their own initiative or at the request of a member or members.

(2) The subject can be discussed by the Council putting it down as one of the matters for consideration at one of the four fixed business meetings of the session; or any member or members can send in notice for such a meeting. In this case very long notice can be given of the meeting so as to ensure adequate discussion.

(3) Any twelve members can demand the summoning of a special general meeting by sending a requisition to the Council, and the Council are bound forthwith to call the meeting. It must be held within three weeks after the delivery of the requisition to the Secretary. This provision in the By-Laws obviously makes it impossible to give more than at the outside 10 days' notice to members, as the requisition to the Secretary has first to be laid before the next meeting of the Council, who have to fix the date and order the printing and sending-out of the notice.

In other words, there are three methods of summoning these meetings, two of which allow of ample notice being given while the other makes it impossible to give more than a very few days' notice. It is, of course, open to members to adopt any of these three methods which they prefer.

IAN MACALISTER,
Secretary.

Royal Institute of British Architects.

Unification and Registration.

SIR,—Very much has been written to the Press on this subject which would have been much more useful if sent to the representative committee set up by the profession to consider and report upon the best means to attain the ideals we all profess.

It would not be very difficult to answer the objections of those who have taken the responsibility of opposing an almost unanimous special Committee (*i.e.*, unanimous except for one member who is now a leader of the "diehard" movement), but I feel that it is the work of the Committee and not of individuals to answer public attacks on our policy. On the other hand, it is, I think, open to individual members of the Committee and other unificationists to reply to such questions as those of Mr. Frank W. Simon, in his letter to Mr. Perks, and of Mr. Horace R. Appelbee, in his letter to yourself, published in *The Builder* for March 17.

Mr. Simon, in his letter to Mr. Perks, says:—"Architecture can only be raised by a more sensitive artistic conscience and desire on the part of the individual architect to spare no effort to achieve the best that is in him; so would the public be educated in an appreciation of architecture if a series of buildings, great and small, bearing the stamp of sincerity and real architectural merit, were erected in their midst." And he asks: "How would unification help this desirable end?"

May I suggest that unification would help:—

(*a*) By setting up and maintaining one standard of professional practice, which no man could defy with impunity.

(*b*) By assuring the best system and method of architectural education to future generations, always progressing with the times.

(*c*) By creating that spirit which induces a man to give the best that is in him by restricting the profession to those who prove themselves fit to be members of a learned society by their capacity to learn.

(*d*) By encouraging the best brains (and discouraging the unfit from entering a profession likely to be overcrowded if left open), by raising the status to that of a "closed profession."

(*e*) By the greater distinction felt by those recognised by the profession; honour rather than wealth would be the aim of a larger number of men in practice.

(*f*) By establishing an unquestioned authority the public would be educated to judge wisely, which it cannot while there is no criterion and authority is divided or questioned.

Mr. Appelbee raises several points of great interest:—

(1) There is no right consequent upon ability to demand admission to the R.I.B.A.

(2) Membership of our Institute (Mr. Appelbee refers to the R.I.B.A. as a club) and registration of competent architects are two absolutely different things.

(3) Registration must include every competent architect, and there must be a test of competency.

(4) Members who elect may expel.

(5) In such case, do members' technical qualifications vanish?

(6) If a member ceases to be a member in the middle of a contract, is the client to be forced to give up the architect?

(7) Once a man is registered, he must remain registered.

(8) Is registration for the benefit of architects or clients?

(9) Clients do not go to estate agents for Norman Shaws, or employ Norman Shaws to prepare plans to submit to a local authority before building their own bungalows.

I am not sure that I can satisfy Mr. Appelbee on these points, but I can at least try to do so, and perhaps thereby convert him.

(1) There will be the same right which exists in the legal and medical professions when unification and registration are achieved.

(2) and (3) are common ground; and in reply to (4) one may easily provide for expulsion from the Institute while the name may still remain on the register.

(5) It will then be abundantly clear that although technically competent such a man has forfeited the confidence of his fellows in some way, not necessarily affecting a client at all. Very little explanation will be needed to show whether the expelled member is rogue, fool, crank, or eccentric genius.

(6) You cannot prevent any man from employing a solicitor struck off the rolls, or a doctor whose name has been removed from the register, if he cares to and knows the facts, any more than you can prevent me from acting on the advice of quacks in any of the closed professions to-day if I am fool enough to do so.

(7) I agree—except that power will be taken to remove a name from the register if the member be convicted of crime, as in the professions of law and medicine.

(8) First for architecture, then for architects, clients and the community.

(9) I agree; and therefore think that fear of the "wide open door" is exaggerated by the opposition.

It seems to me that these are all points for the consideration of the Unification Committee, and that the Committee would welcome all such inquiries, together with suggestions from members of the profession. What we want to do is to "let the dead bury their dead" and keep our minds fixed on the future for which we wish to provide; the immediate present and ourselves we must sacrifice, as may be necessary, to the attainment of our end. But, personally, I do not think any great sacrifice will be demanded of individuals, and I am still sanguine enough to hope that opposition will be replaced by the co-operation of all sections of the profession.

JOHN E. YERBURY.

London.

SIR,—Mr. Perks and his so-called Defence League have been so busy endeavouring to misrepresent the intentions of the Institute Unification Committee that they have not found time to make clear their attitude towards the question of registration by statute. All their arguments are directed to proving the impossibility of it, the failure of attempt to secure it, and its uselessness if it were obtained. We in the provinces are in real earnest about it, and we want to know whether or not those who have advocated it in the past, including Messrs. Cross, Searles-Wood, Hubbard, and Perks, have resolved to give up the effort to secure it as an unprofitable task, and, indeed, a hopeless one. Mr. Perks has stated that it will never be obtained, and he and others interpolate here and there in their speeches a remark to the effect that they favour registration, or are not opposed to it, apparently when they feel they have gone too far in the other direction.

If it is not taking up too much of your space, may I give quotations to show what I mean?

February 7.—Mr. A. W. S. Cross: "Our chances of obtaining statutory powers grow more remote each day."—"The extremely remote and shadow-like chance that in the dim and distant future perhaps some paternal Government will kindly allow the Institute to manage the affairs of the whole architectural profession."

Mr. George Hubbard: "None of us is opposed to registration."—"We remain to-day exactly as we were then (in 1908), without the ghost of a chance of getting a Bill through Parliament. The only chance of getting statutory powers hereafter is if we can show it is in the public interest. Parliament has already protected the public . . . and Parliament does not care a straw about the taste or style of your architecture, and it will not give statutory powers on these lines. Still, we are, I think, all in favour of registration."

Mr. S. Perks: "The Parliamentary agent has written still more emphatically that we have no case, and that we shall not get registration."

Others followed in the same strain, utterly illogical in combination with the principle of "registration first and then unification."

Here, in the provinces, we regard unification as a step to registration, as a step that is well worth effort and some sacrifice, and unless the opponents of it can show us the way to secure registration without this preliminary step we have no use for their propaganda.

HERBERT T. BUCKLAND.

Birmingham.

SIR,—Provincial architects have been singularly inarticulate on the subject as to whether unification should or should not precede registration. I have no authority to speak for any allied society, but I think the following sums up the attitude of Liverpool architects:—

Until some time after the R.I.B.A. Conference in Liverpool last June provincial architects on the whole believed that with unification achieved we should have the immediate advantage of a united profession, that the possibility of getting Parliamentary sanction to registration was strengthened and brought much nearer, that the inevitable risk of unification must be faced, and that generally the proposals contained in the interim report of the Joint Committee were broad and sound. Until details of the scheme have been worked out it is impossible to estimate the number of outside architects who will become entitled to admission to the Institute. Much closer inquiry into their character and qualifications must be made than in the case of those who became Licentiates a few years ago. Many thought then that the prestige of the Institute with the public would be permanently

New Premises, Regent-street, for Messrs. Dickins & Jones: Staircase.
MESSRS. HENRY TANNER, Architects. (*See p.* 477.)

lowered. The misgivings proved groundless and the R.I.B.A. gained about 2,200 new members, many of whom in due course became Fellows. The risk of flooding the Institute to the disadvantage of those who have passed the examinations does not seem greater to-day than then.

Since June there has been a deluge of propaganda against unification, brilliantly organised by Messrs. Cross & Hubbard. The deluge may have gained a recruit or two, and it certainly created an attitude of doubt in minds which a year ago were convinced that unification must precede registration. The strongest argument was undoubtly the opinion of Messrs. Sherwood & Co., the Parliamentary agents.

Elated by a certain measure of success, the opposition made the extraordinary blunder of the special meeting. To endeavour to get a meeting in Conduit-street to prejudge and condemn in advance a policy the details of which are not worked out, but to the principle of which all or nearly all of the allied societies are committed, was a downright insult to the allied societies. Every provincial member of the Institute is agreed that a great question of policy which will intimately affect the whole of the profession must be settled by a postal vote. The Council probably inspires more confidence now than in any period of its existence, and provincial architects believe that the Council is making an honest attempt to understand the wants and wishes of the provinces. With the average London architect who can attend R.I.B.A. meetings it is different. He is not in touch with the provinces; his vote is an expression of his individual sympathies, and the hundreds who can go to Conduit-street cannot represent the thousands whom time and expenses keep away.

I think I am right in assuming that the Council intends to put the details of the unification scheme to the test of a postal vote. It would clear the air if candidates for the new Council would intimate their views on the postal vote before the voting papers are circulated.

Liverpool. HASTWELL GRAYSON.

EXHIBITION NOTES.

MR. F. V. BLUNDSTONE'S SCULPTURE.

We recently had an opportunity of seeing some sculpture by Mr. F. V. Blundstone, intended for the Royal Academy Exhibition, and other work of memorial character, at his studio, 15A, Douro-place, Kensington. The subject of his Academy group is "*Sic transit gloria mundi*," and represents an undraped figure of a youth stretched lifeless across the lap of the sphinx, representing the transit of the soul, a belief which lay so much at the centre of the Egyptian religion. On the base of the throne, or seat on which the sphinx is seated, is inscribed a passage from the "Book of the Dead." The recumbent figure is modelled with much grace and rhythmical feeling, and is of beautiful form. As is not seldom the case the feet are not quite extricated from the limitations set by the model's boots; and so with the figure of the sphinx, it is not quite veiled in the mystery of its origin, nor is there quite enough of the sculptor emerging through it, and it seems a copy rather than something touched with emotion and interpreted afresh to the theme. Thus, in a degree it fails to be impressive. This must be said as part of the business of criticism; another part is to acknowledge the sound craftsmanship and sincerity of aim in this sculptor's work. The sculptor's model for the Folkestone Memorial represents a standing figure, partially draped, of "Reverence" holding a wreath and cross: the figure stands on a plinth which rises from the middle of a slightly concave walling which supports it on either side, and on which are inscribed the names of the fallen—the height inclusive of the figure being 25 ft. This is a very successful example of the sculptor's work, dignified in its proportions and pose, and impressive altogether. There is, unfortunately, over so much of the average sculpture of to-day, the sense of its slender ancestry, its derivation from merely Victorian antecedents, missing the more statuesque breadth of treatment and austerity of conception which is noticeable in more classical examples. This quality of reserve, of a more complete metamorphosis from nature to art, would free the sculptor from the Royal Academy's rather drawing-room art atmosphere, and also from that over-redundancy of wings! Wings are as much a stumbling block to sculptors as are chimneys to some architects, though not for the same reason; Mr. Blundstone's art would soar better without so many of them. This too easy and often so conventional an attribute disturbs attention from more legitimately plastic requirements, detracting more often than adding to the figure or group which carries them. This is not intended in criticism of this sculptor's work, which is fine enough for us to wish him to believe that the least part of the romance, the most inadequate attribute to the ideal figure, are these appendages, and we take the greater pleasure in his fine figure of "Temperance" because it also expresses in its name that restraint and absence from any theatrical appeal which irresistibly associates itself so often with wings! We do not say that art in the past endorses this feeling, and Greek and Roman art include them, but a realism derived from the goose rather than the gods has robbed them from being of much service to the modern sculptor. The sculpture of to-day presents many instances of this failure. Mr. Blundstone has also on view the model for his Stalybridge Memorial. This, a long, low, crescent-shaped wall, opening at the centre to the river, has at each side sculptured groups representing angels supporting fallen soldiers, the names of the fallen being inscribed along the face of the wall. In a general survey of this sculptor's work we are struck with its sincerity and attainment, and we are glad to think that it is bringing him extended opportunities, and that his work as an artist is appreciated. It could be wished that committees, so little able to give any inspiration to art, would allow the artist scope to create a more vital subject matter; if he were given more freedom in this way it would be greatly to the advantage of art. So many of these war memorials droop from the sheer inadequacy, the jejune character, of the subjects imposed on the artist.

THE TWENTY-ONE GALLERY.

Various and interesting as are the exhibitions held at this attractive little gallery, the works of Vignoles Fisher now on view there sustain the reputation it has made for itself for work of a distinctive character. These water-colours are noticeable for their spontaneous and open-air character; with breadth and technical efficiency they convey the local characteristics of the country portrayed, which is vividly brought before us. Some of these water-colours, the subject matter of which is drawn from the Cotswolds, are among the best in the exhibition. "Winter Morning" (No. 22), otherwise successful, suffers from a baldness and want of interest in the foreground, which detracts from its value. Mr. Fisher's treatment of sky is full of vigour and buoyancy; and a feature of the drawings is the successful way distance is conveyed—we stretch our gaze over a wide country in such a drawing as that of "Looking over Lewes" (No. 34). These drawings carry on something of the "old water-colour" tradition, in being free from any over-subjectiveness, or theories about art, and speak for themselves in the sincerity of their impulse, and their effect.

The Bartlett School of Architecture.

Two open Entrance Exhibitions, tenable at the Bartlett School of Architecture, of the value of £40 a year, may be awarded in June, 1922. Candidates for the first exhibition must have passed the Matriculation Examination of the London University, or some other examination accepted in its stead. Candidates for the second exhibition must be graduates of a British University or some other university approved by the Selecting Committee. The Exhibitions may be tenable for five years, subject to satisfactory progress. Full particulars may be obtained from the Secretary, University College, London, W.C. 1.

THE ARCHITECTURAL ASSOCIATION.

THE President (MR. W. G. NEWTON) occupied the chair at a general meeting of the Architectural Association, held at 34-35, Bedford-square, W.C., on Monday last.

Election of Members.

The following were unanimously elected as new members :—

A. L. Knott.	Austin Blomfield.
Sidney Simpson.	L. E. C. Simpson.
G. S. Harrison.	A. E. V. Tutte.
H. T. Finchett-Maddock.	David Kelly.

Mr. Charles Perks was reinstated as a member.

Debenture Fund.

The following subscriptions to debenture issue were announced :—Lady A. C. Bartlett, £100; Mr. T. M. Wilson, £100; Messrs. L. & W. Whitehead, Ltd., £250; Messrs. A. Caesar & Sons, £50; and Mr. G. B. Carvill, £50.

SCULPTURE IN ARCHITECTURE.

MR. GILBERT BAYES addressed the gathering on "The Treatment of Sculpture in Architecture." In his opening remarks he expressed his disagreement with the theory that the sculptor should carve on the stone *in situ* without the use of models. There were, he said, many reasons why models should be used in any big architectural scheme. There was often the failure to recognise the fact that when coming on a building the sculptor saw less of the work on which he was engaged than from any other position. The scaffolding, guard rails, etc., were so much in the way that the sculptor was practically in a hole, and when the scaffolding was taken away it was probably too late to make any alteration.

He had a theory that sculptors were very much more affected by the surroundings than was realised by the general public. Two of the very big factors which affected sculptors were (1) the architecture—which was an enormous factor, and (2) the exhibition, which to his mind had a thoroughly artificial effect, and although it had its purpose it also had very great risks. So much did those two factors affect sculptors that they could almost be divided into two groups, namely, those who thought for, worked for, and were affected by the exhibition, and those who thought for, worked for, and were affected by the architecture and surroundings generally. The one was simply thinking of the annual exhibition, and the other was thinking of a specific purpose. To his mind, the French sculptor, Rodin, was typically an exhibition sculptor, and he (the speaker) could not call to mind any work of Rodin's which seemed to be affected by the architectural interest of the case. The Serbian sculptors, Mestrovic and Rosandic, were in the other school. Really they were trained in the Viennese school and affected by the Viennese tradition. They were men who were affected by the modern school of German architecture, which was of a most severe, almost primitive, style. All three of those sculptors had done much better work than was to be seen in London. The Viennese school of architecture had resulted in a great deal of archaic building, and the work of the two Serbian sculptors was all of a very archaic character. But in this country architecture and sculpture were influenced by the Classical, which had been running through the buildings here to a great extent, with the result that architects and sculptors could hardly help playing at being Classical.

He suggested that in modern Classical buildings the Classical part was practically only the trimmings. He thought the Classic tradition followed by architects in England for so long had had an immense bearing on the sculpture. The tradition followed had been Classic at its zenith; sculptors had tried to live at the same height, and seemed to have taken themselves so seriously that they had entirely forgotten that there might be such a thing as a real light humour now and then. Sculptors need not always be so serious as they were. The grotesque had been almost entirely ignored, due, he thought, to the Classic. Another thing which Classic, plus the exhibition, had brought very much to the fore was the production of life figures, very careful studies from life, remarkably careful technique, but forming no integral part of the buildings they were supposed to decorate. That seemed to him a very serious thing. In their original surroundings, Classical buildings were designed to keep out light and heat as much as possible, with due consideration of the limitation of stone and marble.

To-day, in the climate of this country, it was desirable to admit as much light and sun as possible. Most modern buildings were of reinforced concrete, and the rest—the Classical part—was trimmings. Arthur Rackham held forth on that subject some years ago, and he described a three-figure group as "Charity offering alms to Poverty, but restrained by Prudence." Symbolism to-day seemed dead; a few of the *élite* might use it, but a basis must be found on which the man in the street could be interested in it. That kind of symbolism did not appeal to the general public, but he thought a more primitive Greek would have lent itself more to the spirit of to-day. Primitive Greek was not as perfect as Classic, but it would have been more attractive. It came more from the terra-cotta period, and there was more colour in it.

Attempts had been made to make London a white city, but at present he did not think that could be done. It might, however, have been made a coloured city, and, after form, colour was the most primitive appeal. Colour was used to a great extent in the old days, and it had been proved that what was thought to have been white marble in the Italian Classic buildings was really coloured. Another drawback of the Classic style was that it was difficult to weave into it the subjects of to-day; there was no reason why the subjects of the present day, which would appeal to the public, should be ignored. Given the right setting, topical subjects could be used by the sculptor, and would give to his work a value which would make his art a thing of the day and not a pretence of something many hundred years ago.

When he was in Bruges a few years ago, a well-known sculptor had shown him a studio full of ideal work, which did not interest him (the speaker) much, but some of that sculptor's work on a restored Gothic building was full of interest. He had carved funny little grotesque figures, such as the clerk of works, the sculptor, and the architect—in a fur coat, cuffs, and collar. Those figures were the most live stuff he ever saw by that sculptor. He thought Gothic was nearer to the spirit of the ordinary man or woman than the most perfect Classic. Largely owing to the exhibitions, a great deal was being made of individualistic ideas, and the cry was always for individual thought and outlook.

He felt that the Gothic revival of the past century lapsed to a great extent because there was not sufficient breaking away from the old traditions, which were too slavishly followed and not sufficiently welded to the present. He did not wish to run down tradition in any way, for it was a most important thing, but, unfortunately, it had been broken in this country and was very difficult to pick up again. Tradition was the only root on which they could build, but he felt it was very much like a tree in that it was the new spores growing off the old wood that would carry the fruit. The styles should always have something grafted on to them which connected them with to-day; they might be 95 per cent. of the old style and 5 per cent. of the present, but there must be something of the present if it was to live. Scale, proportion, colour, and grouping, if properly considered, would prevent a figure on a building from being purely a life study. The life figure had too long done duty for a piece of sculpture, which it was not. Big groups on a big building had to be considered not only as figures or whatever they represented, but the whole mass had to be considered from time to time simply as so much abstract form, and whether the abstract form was satisfying.

If they thought it desirable that sculpture on the whole should be more severe and less of the life figure, he thought it was up to architects to give sculptors rather more severe buildings on which to apply the sculpture. One could not take a piece of Assyrian relief and put it on the Parthenon, no more than one could take a part of the Parthenon relief and put it on an Assyrian building, without making both appear ridiculous. The future of sculpture was to a large extent in the hands of architects, and he hoped architects would use their opportunities wisely.

Discussion.

In proposing a vote of thanks to the lecturer, MR. FRANCIS HOOPER said the more architects, sculptors and painters associated together the better it would be for all parties. He urged the importance of the environment of sculpture, which was, he said, often badly treated. He saw a war memorial recently which had a beer-house, a butcher's shop of a particularly blatant character, and a cycle shop for background, and on the opposite side was a big hoarding.

MR. GILBERT JENKINS said it was very difficult in London to treat the exterior of a building with colour; colour was a feature of southern countries, and was rarely attempted with success in northern latitudes. It seemed to him that sculpture and painting were at present going through the phase which architecture went through before the war, when architects were urged to break away from tradition and do something entirely different from anything done before. The result was a lot of work which was interesting at the time but which did not seem to have lasted or to have founded a new tradition which broke away from the grand styles. He thought if they built up on the fine old English traditions, whether Classic or Gothic, they would be more likely to succeed than by trying to form an entirely new style.

MR. WALTER GILBERT read extracts from a letter he had received from Mr. Alfred Gilbert, in which the influence of good literature on sculpture was emphasised.

MR. T. LAWRENCE DALE expressed doubt whether any real joy were got from Corinthian columns. He instanced two buildings recently built in London, one a fine building for a firm of motor manufacturers in Piccadilly, by Mr. Curtis Green, and a little scent shop in Bond-street, by Mr. Voysey, and said he believed everybody would get more pleasure out of the little shop than the large one. The small shop was treated with perfectly plain cement-covered walls with a little carving and colour, whereas the motor shop was treated with a very fine specimen of the Corinthian order.

MR. R. R. GOULDEN, referring to the lecturer's remarks on exhibitions, said it appeared to him that if the piece of sculpture intended for outside use looked well in an exhibition it must necessarily look absurd when placed outside, and *vice versa*.

MR. MANNING ROBERTSON said he did not think it fair to blame northern latitudes for the difficulties of obtaining a satisfactory effect with colour, but he did not think it practicable to put colour on a building if it were going to be covered with soot in a short time. Architects should use every endeavour to get rid of smoke and soot first, and then there would be no difficulty about satisfactory colour treatments.

Mr. Sylvester Sullivan, Mr. F. R. Hiorns, Mr. T. S. Tait, and the President also took part in the discussion, and a hearty vote of thanks was passed to the lecturer.

The New Waterloo Station.

In our last issue the area of the roof glazing at the new Waterloo Station, which was carried out by Messrs. W. Edgcumbe Rendle & Co., Ltd., of 5, Victoria-street, S.W. 1, was given as 56,000 ft. super; this should have been 156,000 ft. super, in which 1,000 tons of glass were used.

LIVERPOOL ARCHITECTURAL SOCIETY.

PRESENT-DAY ARCHITECTURAL PROBLEMS.

AT a recent meeting of the Liverpool Architectural Society, MR. MAURICE E WEBB, F.R.I.B.A., read a well-considered paper, entitled "Some Architectural Problems of To-day," in which some of the questions uppermost in the minds of architects were dealt with.

After some preliminary remarks, he said the purely architectural problems which faced them to-day were in their essence the same as those which had faced every architect since "Father Adam sat under the tree and scratched with a stick in the mould." Briefly stated, they were to fashion beautiful buildings out of the materials which lay ready to hand, and to make those buildings useful as well as beautiful; to make them perfectly fitting for the purposes for which they were designed; and to clothe each in a dress which best befitted its purpose. In every age, new methods of life, new materials for building, and new ideals of citizenship had tended to obscure these fundamental principles of good architecture; and so in their time they had seen the styles and methods of the past twisted to fit the needs of the present. They had seen the Greek temple adapted to the requirements of the modern bank, with the entrance to the strong rooms placed under what would have been the great altar in more religious times. They had seen a Roman palace used for the purpose of a London club house, and the noblest examples of Gothic design lifted bodily for the decoration of the upper stories of the American skyscraper. But through all those curious evolutions there had been a striving after true architectural expression, and gradually in each period of history the manners and customs of the people had been faithfully portrayed in brick and stone for the future to read and understand.

It was not, therefore, unreasonable to hope, although there was little sign of it so far as they could see, that out of the confused jumble of styles and mannerisms, of which the modern ease of travel and the use of the printing press were the direct cause, some definite distinctive character was in reality being given to the buildings of to-day, perhaps unconsciously. They lived too close to their own times to know more than that one great problem to-day was to see clearly how to reconcile the needs of their age with the principles of their art. The needs were always changing; the principles remained the same.

The evolution of their architectural alphabet must follow and could not precede the evolution of their habits; the individual could do little or nothing by himself, but as a profession they could and must face the especial problems of the age in which they lived, deal with them as they arose, and attempt to solve them in such a way as to produce ultimately a successful result in the architecture of their time. It was, he thought, obvious that the first of those problems was education.

Architectural Education.

It was like bringing coals to Newcastle to discuss architectural education in Liverpool at the present time—

> "Where scholars in their Roman hats
> Are plentiful as tabby cats,
> And some say far too many!
>
> Where art professors you may meet
> In two's and three's in every street,
> Maintaining with no little heat
> Their various opinions."

In one of the opinions of his audience they would all agree, and that was on the merits of their great School of Architecture, which from small beginnings had now become such an important influence in the lives of many future architects, and had helped so materially through its Head in educating the public as well into the mysteries of the Mistress Art. In his student days there were no schools of architecture as they knew them to-day. They learnt, or they did not learn, their architectural alphabet as pupils or apprentices in architects' offices. In twenty short years all that had been changed, until to-day there was a network of schools all over the British Empire whose sole business it was to teach architecture. All of them were part of a vast system of teaching which was, he believed, wisely and tactfully administered by the Board of Architectural Education on which the schools were represented. The sudden growth of that system was not, as they might have expected, checked by the upheaval caused by the war; it was, on the contrary, enormously extended, and the number of students in the schools had, broadly speaking, doubled since the war. On looking back it was obvious, he thought, that that sudden growth was due in a large measure to the expansion of every kind of organised education in this country, and architects could not be left behind in the race for knowledge. The war fostered that spirit, because the young men found out for themselves that organised training in the army taught them enough of the art of war in a few years to enable them to compete in a real battle for life with the highly-trained German army. On returning to civil life they made up their minds to learn architecture thoroughly, and entered the schools literally in hundreds. So much for the past, what of the future? How was that great machine to be used best for architecture? What was to be its next development? As a member of the Board of Architectural Education, it was intensely interesting for him to watch the gradually broadening basis of the education which was being given in the schools, and it was on those lines that he believed progress lay, and that the problem should be tackled.

In Liverpool he believed they set before the students a high ideal of citizenship as one of the most important things for a young architect to realise, that was, that what he was learning was not for himself alone but for the good of the community of which he formed a humble part. They could see that reflected now in the curriculum of all the schools in the addition of such subjects as town planning, zoning, &c., where the needs of the community were the primary factor in the architect's thought.

At Cambridge, as one would expect in an older university, a great deal of time was given to the general history of art, and it was good to know that men who were going to be painters and sculptors were now attending that school, as well as architects. At Cambridge also men were being encouraged to take a portion of their architectural degree course in science, engineering, mathematics, or history by way of broadening their education in every way.

At Bristol, where a new school was in full swing, a definite step in educating the architect in touch with the kindred arts of painting and sculpture had been taken by affiliating the school with the Royal West of England Academy.

In London, at the Architectural Association, lectures were now given by men distinguished for their work in other branches of artistic endeavour by way of making the student realise that architecture was a part of everyday life. The Board of Architectural Education was doing all it could to foster the same spirit by exempting students of recognised schools from the examinations of the Royal Institute in order that the schools might each devote in its own way the time at the disposal of its students to the acquisition of real knowledge rather than the mere cram-book information with which examinations, as such, could too often be successfully negotiated. In that policy of trusting to the schools instead of its own Institute examinations to qualify for practice, the architectural profession was, he believed, alone of all the great professions, but the result must, in his opinion, be of great good to the art of architecture in this country by opening up a wider field for the initiative of the professors and teachers in the schools and freeing them from the restrictive influence which examinations of necessity imposed, without in any way lowering the standard of knowledge required by the student before he commenced to practise. In fact, it was already tending to raise it, and for the benefit of those who now laid such stress on the examination for the Associateship of the Royal Institute it might not be out of place to point out that the present generation of young architects already valued the diplomas they had received from their schools far more highly than the letters "A.R.I.B.A." In a short time the public would do so too, and would look to see, when choosing an architect, not only whether he was an "F.R.I.B.A." or an "A.R.I.B.A." but what other degrees or honours he had taken.

Overcrowding in the Profession.

In connection with the architectural schools it had been recently said that too many men and women were being encouraged to become architects, and that that was a problem which the profession should tackle. For the women he could not speak. Very few women architects had at present succeeded in their profession. But as regarded the men overcrowding the profession, the same sort of things were said after lunatic asylums were first started—that there were more lunatics! There were not more lunatics, of course, but there were more facilities for counting them. The same with architectural students; when they were all pupils in architects' offices no one knew how many there were. Now that they were all, or very nearly all, annually hatched out under the tender wings of Professors Reilly, Robert Atkinson, Richardson, and others, they were easily reckoned up. The number of each brood was known, and was probably not in excess of the individual hatchings which used to take place in architects' offices in the town or city which the school now served. Collectively the result made a better brood, and the profession, through the schools and its general if rather tentative control over them, had in its hands a great power for good which, if wisely used in the future, as in the past, must result in forming a body of educated artists working on similar lines who would be the forerunners of a traditional method of building in this country based on first principles and not on styles. That was the ideal the schools had before them, and the educational problem to-day was not overcrowding, competition, or questions of examinations at the Institute, but the need for enlisting the help and sympathy of all architects to assist the schools in their great endeavour.

Official Architecture.

When a student had completed his five-year course in the schools he was at once up against another of the architect's problems Should he set up for himself in private practice or take a post as a salaried official in a Government department; in other words, become an official architect? When he (the speaker) last spoke in Liverpool on that subject, the Office of Works was under the rule of Sir Alfred Mond, and growing like a weed in the soil of bureaucracy. Thanks to Sir Eric Geddes and his Committee, a drastic reduction in all branches of State trading was taking place, so that now, under the more sympathetic rule of Lord Crawford, the Office of Works appeared to be interfering less with private enterprise, and had reduced its staff to more manageable proportions. At the same time, if as a profession they did not believe that a Government department was likely to give to the community architecture as good as could be obtained from an architect in private practice, they must not relax their efforts to see that the Office of Works, Government departments, and municipal authorities throughout the country confined their architectural efforts to their proper sphere, namely, the maintenance and repair of public buildings.

It was not, he thought, generally known that in the Army Estimates, before Sir Eric Geddes laid his hand upon them, initial provision was taken for the following important buildings, amongst many other of a lesser importance: Signal Service Training Centre

(Maresfield), £188,500; School for Mechanical Transport Drivers (Catterick Bridge), £127,500; Artificers' Training School (Blandford), £233,600; Reconstruction of Wellington Barracks (London), £183,000; Chelsea Barracks, £117,000; Quarters for N.C.O.'s and Men (Guards), £140,000.

That was only a partial list taken from page 66, Vol. 1, of the Geddes Report, and provided a suitable subject for reflection, because it was a list of buildings intended to be built by one Department of State alone. As would be seen by referring to the Report, many of them were large schemes of architectural importance and most were considerable ones, but the especial interest to architects, apart from their capacity as taxpayers, was who did the War Office intend to ask to design those buildings? Did it intend to allow private enterprise to play a part, or did it intend to get those designs turned out anonymously by one of its own departments? Were the designs already prepared? If so, could the public see them, or was the Geddes Committee romancing about these projected buildings? When public funds were being spent on this scale it was outrageous that the Government should not by competition or selection attempt to obtain the best possible design in each case. It could not be in the true interests of the people or of architecture that great buildings should be erected to designs prepared in Government offices where huge staffs were working without the incentive of competition or even of recognition for their individual work. All credit to Lord Crawford for recognising that by giving the new Parliament Buildings in Belfast to two distinguished architects of proved capacity; but two swallows did not make a summer, and in his view architects must continue to press for a return to pre-war methods when private enterprise was given a wider scope.

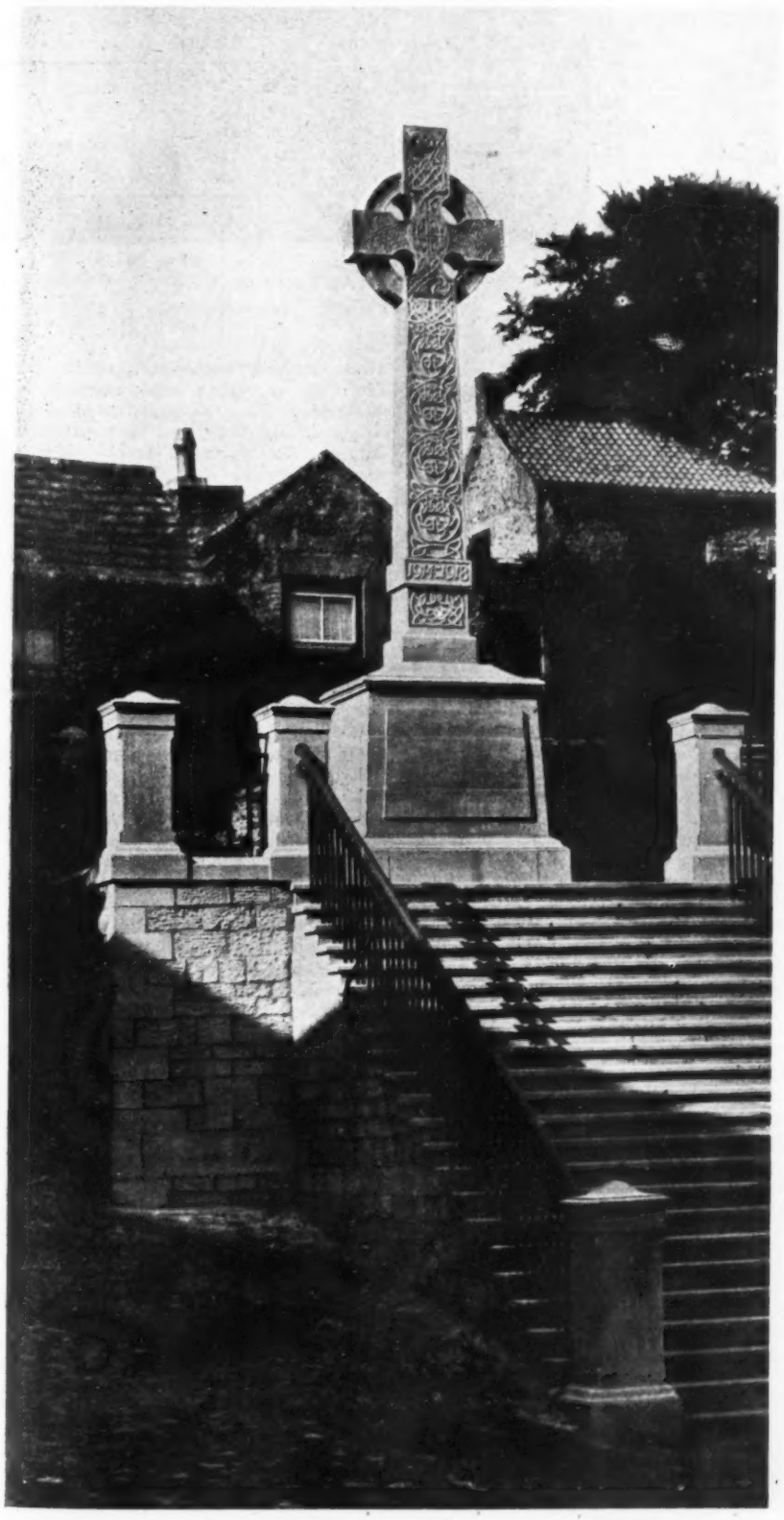
Another side of the question was that of the repair of ancient monuments, which was in the hands of the Office of Works. It was obvious that local architects should possess the knowledge of the traditions of building peculiar to their district, and that they had more reverence for the history and significance of the local monuments than a department situate in London. He wondered that the local societies did not press for more participation in works of restoration, and if they did he was sure they could make out a good case. The Office of Works was known to be anxious to get all the Cathedrals into its hands; but in that case architects as a body had, he believed, the support of both laity and clergy in their absolute antagonism to the suggestion.

Architecture was, and always must be, an art requiring the personal supervision of the artist. His work began with his drawing-board, and ended only when the building was complete. There was no half-way house, and the vast departments for the designing of new buildings and the wholesale restoration of old ones could not give as good service to the community as the individual artist. The Government made no use of architects as a body during the war. It did not ask the advice of architects after the war on the vital question of housing, and it continued to ignore them in all its building programmes. Unless the profession stood up to it and made it clear that on one point, if no other, architects were united, they would find in time not only that private practice in this country would be deprived of public work but also that those architects who chose to devote their time and energies to work in official capacities would receive less and less recognition of what they did until they reached the position of head of their department. Both for the private and the official architect the outlook was serious; for architecture, he thought, it was deplorable.

Unification and Registration.

In emphasising the need for unity in the profession, the lecturer recounted some of his experiences in Gallipoli during the war, which showed the necessity of various branches of the forces working together for a common end. Continuing, he said so far as the architectural profession was concerned he was certain that unity within the ranks was essential if the leaders were to use their talents for the best service of the profession. But he was also certain that almost any sacrifice was worth while to secure united leadership. At present they had not got it. Great efforts had recently been made, and were still being made, to attain to it by the amalgamation of the R.I.B.A., the Society of Architects, and members of the profession who had hitherto held aloof from either body, the intention being to present a united front to the world when attacked, as they had recently been by a late President of one of those societies, and also a united front when they were attacking proposals which were inimical to their art or the practise of it, as they were constantly called upon to do.

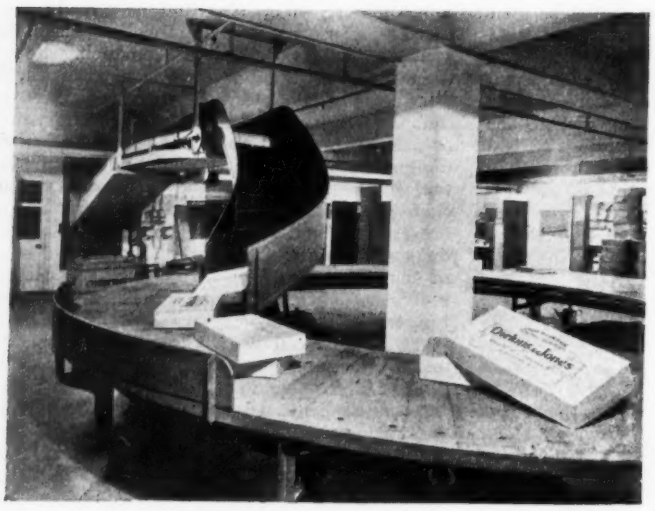
On such broad grounds as those he believed there could be no member of the profession who



"Green Howards" War Memorial, Richmond, Yorks.

MESSRS. BAIRD & THOMSON, FF.R.I.B.A., Architects.

[This memorial has been erected at Richmond, Yorks, in memory of the fallen of the Princess of Wales's Own Yorkshire Regiment ("Green Howards"), and a book with their names has been deposited in the parish church. The cross, base, pillars, and walling are in Dunhouse stone, and the steps in hard York stone. The steps and pedestal were executed by Messrs. George Gradon & Son, of Durham, and the cross, shaft, &c., by Messrs. George W. Milburn & Son, of Bootham Bar, York.]



Parcels Conveyor.

An Interior View.

New Premises, Regent Street, for Messrs. Dickins & Jones. Messrs. Henry Tanner, Architects. (*See p.* 477.)

could deny, if he thought for a moment, the immense advantage—if they were organised at all—of having one organisation under one leadership embracing the whole profession and including everyone who was and had been for a reasonable period a genuine architect. In two things they had as a profession worked together voluntarily in a united way: (1) education, and (2) public competitions. As a result, no public or private body in this country could hold an open competition without reasonable safeguards that it would be conducted fairly and an architect appointed to judge the merits of the architecture submitted. No architectural school in the country could hope for any success unless it was conducted on lines approved by the Board of Architectural Education and they all willingly co-operated in the aims and ideals of that Board. It only needed one further step in that voluntary system of control to make a success of what so many men desired, and that was some protection for the public against the quack architect. That was called registration, and whether it should be voluntary or State regulated was now the issue. If it were voluntary, as was now proposed by the Unification Committee as a preliminary measure, it could obviously only be done by a united effort. If it were compulsory, under Act of Parliament, surely it was obvious that unity was even more necessary than ever to persuade Parliament to grant registration. Parliament had much too much to do even to discuss the subject unless it were approached by a profession united as to the best method of obtaining it.

It seemed curious that men should urge a certain course which they proclaimed from the house-tops to be impossible of attainment and at the same time oppose with all their power a line of action which had for its objects the same end and which would, judging by the analogy of the R.I.B.A.'s efforts to conduct competitions and education on a voluntary basis, stand a reasonable chance of an equally successful result. So much misrepresentation had been cast upon the proposals of the Unification Committee that it was essential the other side should be heard. He believed that if every genuine architect in the country were offered sufficiently generous terms to join the Institute (and it was no good half doing it), many of the difficulties in the provinces would disappear in time. The quack who styled himself "Undertaker and Architect," or "Estate Agent, Valuer, and Architect," would be unmasked, because he would have the simple choice either to drop the word architect, or on entering the R.I.B.A. to drop the remainder of his business title and also the work he did under it. There would be no law to make him do so, there was no law to prevent people holding competitions that were not in conformity with the regulations, but the moral force of the Institute's authority had proved sufficient in this case and the public would soon understand in the other that genuine architects must be members of the Institute and registered as such. In time, they would employ on architectural works the architect, and leave funerals and auctions to those properly qualified to undertake them. He was sure Mr. Perks, Mr. Hubbard, Mr. Cross, and their friends were honest in their desire for the good of the profession, though some thought them a trifle inconsistent in their methods. While those gentlemen were forming leagues and other disruptive devices he (the speaker) for one did not intend to sit down and merely look on while the work of months was wasted and the future prejudiced. Was it sufficiently realised in the profession that if any question affecting architects or architecture were raised in Parliament there was no one who could give an authoritative answer? If the R.I.B.A. said "Yes," and "yes" was awkward for the Minister who had to answer the question, he could always find someone else to say "No," and ride off on the easy reply that "Architects don't seem to know what they want themselves." It seemed the common-sense attitude that the two societies should join forces. Recently the Surveyors' Institution had absorbed the Quantity Surveyors' Association and had taken the members into its Fellowship and other classes according to classification recommended by the Council of the Quantity Surveyors' Association. Why had they done that at some sacrifice to those who had passed the Surveyors' Institution Examinations? Presumably because they felt that the need for unity of effort was worth some sacrifice apart altogether from registration by Act of Parliament.

That problem of the immediate future was an important one; the opportunity of solving it was here on the lines of a general effort towards getting every responsible architect into their ranks voluntarily once and for all. If differences of method could be forgotten and a generous treatment meted out to those who would in the end help the Institute more than themselves by coming in, it was certain that the profession would ultimately benefit, and its leaders would have more time during their deliberations to give their thought to the infinitely larger problems of the practice of the art of architecture without the distracting questions of internal policy which were forced upon them to-day.

Housing.

There was another problem affecting architects very vitally, and that was housing. In America, according to the *Proceedings* of the Convention of American architects held in New York last summer, it was apparently felt by architects that housing was slipping out of the hands of architects and that a serious effort ought to be made to show the American public that where houses were concerned there architects should be gathered together, and that, in fact, the architect was essential to house designing. The movement started in Minneapolis amongst a band of enthusiasts of the Minneapolis Chapter of Architects, who decided that they would form a housing bureau and that they would design and publish a book containing a large number of completely-worked-out designs of varying types of cottages for the working classes, and that they would sell these designs individually to anyone who cared to buy. They further resolved that the information thus sold should be sufficient to enable the purchaser to build the house, namely, full working drawings, details, specifications, and quantities. They each put up a small sum to cover expenses, on which they would eventually reap a small dividend.

It took them many months of work, and infinite care was taken to see that every house was as good as the combined brains of the bureau could make it, and that the needs of the different localities, materials, &c., were properly catered for in the series of designs. In the end 100 complete sets of designs, specifications and quantities were worked out and a firm of lumber haulers undertook the cost of publication. Each set was sold at 17 dollars (about £4 in English equivalent) and bore no name of any architect upon it, merely the statement that it was prepared and guaranteed accurate by the Minneapolis Bureau of Architects. So successful was this scheme that the New York Convention was asked to take it over for the whole of America and expand it as necessary. That was done after much discussion of the kind one would expect, namely, that it savoured of advertising, that it would ruin men whose practices were entirely confined to these small houses, but these objections were eventually overruled by the majority who felt that if adopted the profession as a whole could say: "Here is our contribution to the housing problem. We do not benefit individually by it, though we may do collectively by associating the word architect with the word 'house' in the public's mind; but we do benefit the public by putting at their disposal for a nominal charge a range of good plans and complete particulars for building from them." It would be interesting to see how that scheme was succeeding, but it was, at all events, a bold and public-spirited conception, and in view of the fact that much housing still remained to be done in this country it might possibly contain the germs of an idea for adaptation to the conditions here.

In conclusion, he put forward the claims on the profession of the Architects' Benevolent Society, which, he said, in spite of largely increased subscriptions, was unable to meet the calls made on it. The largest sum it was able to pay as a pension was £25, which was totally inadequate in some of the really tragic cases with which it had to deal.

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ILLUSTRATIONS.

New Premises for Messrs. Dickins & Jones, Ltd. This building has been erected from the designs of Messrs. Henry Tanner, of 12, Regent-street, and has been remarkable for the rapidity with which it has been erected. The plan is simple, and large open spaces have been attained which are required for this type of business, but this has necessitated the level of the top floor being lowered to 60 ft., so this floor has been made a high one to balance with adjoining buildings. An Egyptian feeling has been aimed at in the treatment of the elevation.

The architects are Messrs. Henry Tanner, of 12, Regent-street, S.W.1, and the general contractors are Messrs. Higgs & Hill, Ltd.

MEETINGS.

SATURDAY, *April* 1.

Building Surveyors' and Inspectors' Association.—Special General Meeting. At Town Hall, Manchester. 3.30 p.m.

MONDAY, *April* 3.

Royal Institute of British Architects.—Mr. S. C. Ramsey on "London Clubs." At 9, Conduit-street, W. 1. 8 p.m.

TUESDAY, *April* 4.

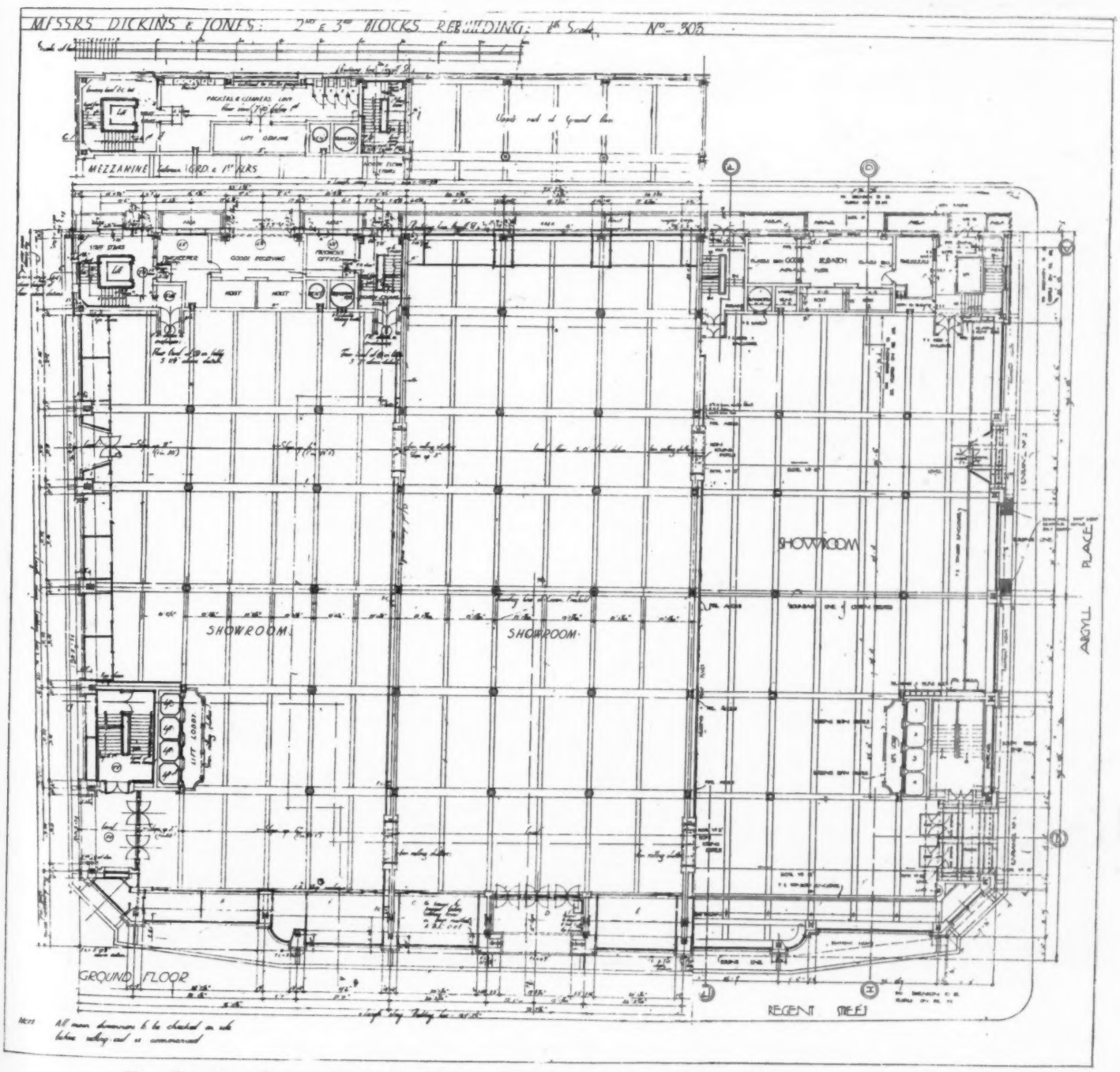
Institution of Civil Engineers.—Sir R. A Hadfield on "Corrosion of Ferrous Metals.' At Great George Street, S.W. 1. 6 p.m.

WEDNESDAY, *April* 5.

Royal Archæological Institute.—Mr. P. Nelson on "Some Unpublished Examples of English Alabasters." At Burlington House, Piccadilly, W.1. 4.30 p.m.

Greater London.

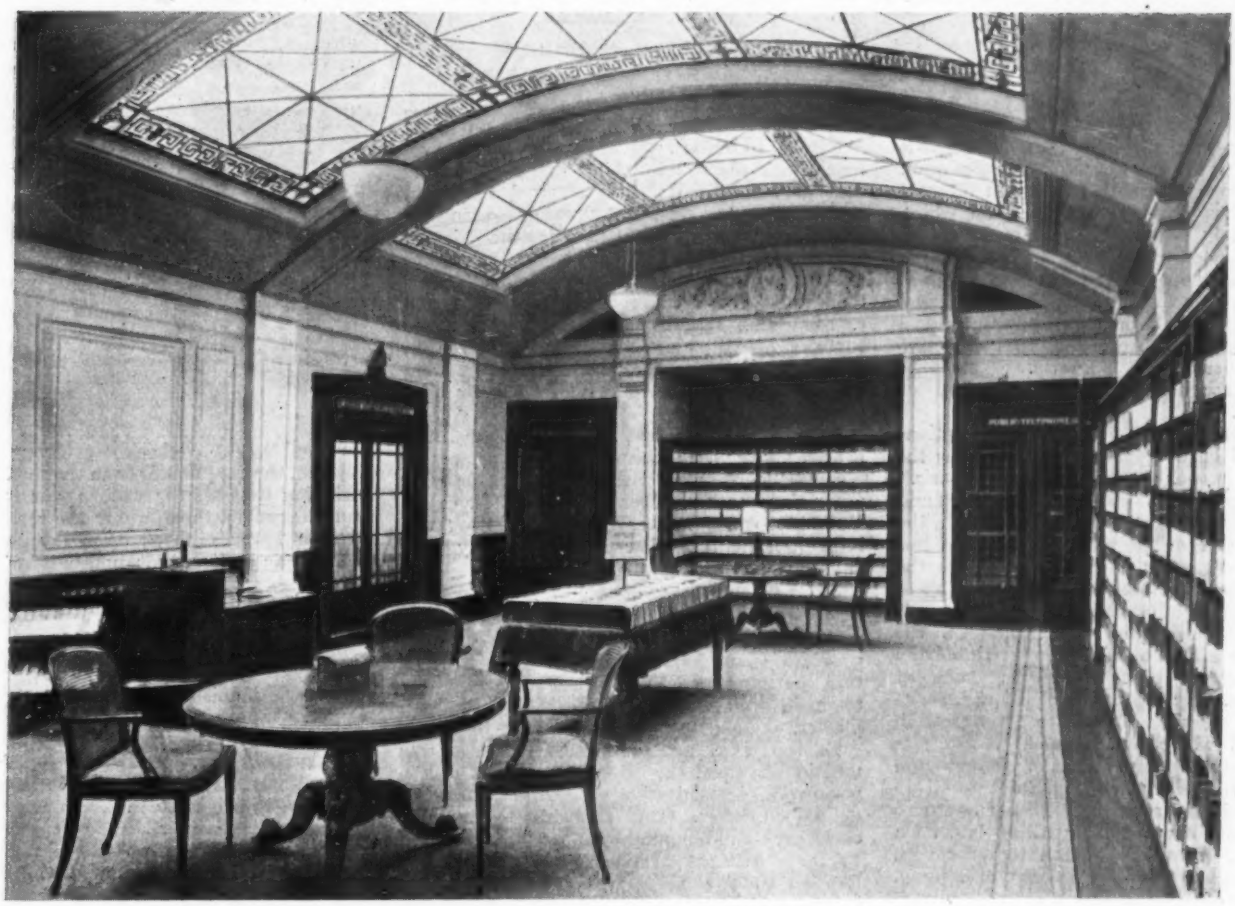
At the sitting of the Royal Commission on London Government on Tuesday, Colonel F. S. W. Cornwallis (Chairman of the Kent County Council), opposing the extension of the London County area, said if the London scheme were adopted the new authority would have a population larger than that of Scotland and Wales together, approximately equal to that of Belgium, and much larger than the population of either Holland, Portugal, Sweden, or Switzerland. It seemed to him inevitable that an administrative county of such gigantic proportions would possess a strength and influence which would make it impossible for any adjoining county or combination of adjoining counties to confer or co-operate with it on any terms approaching equality or independence.



New Premises, Regent Street, for Messrs. Dickins & Jones. MESSRS. HENRY TANNER, Architects.

New Premises, Regent Street, for Messrs. Dickins & Jones.

MESSRS. HENRY TANNER, Architects. (*See p.* 477.)



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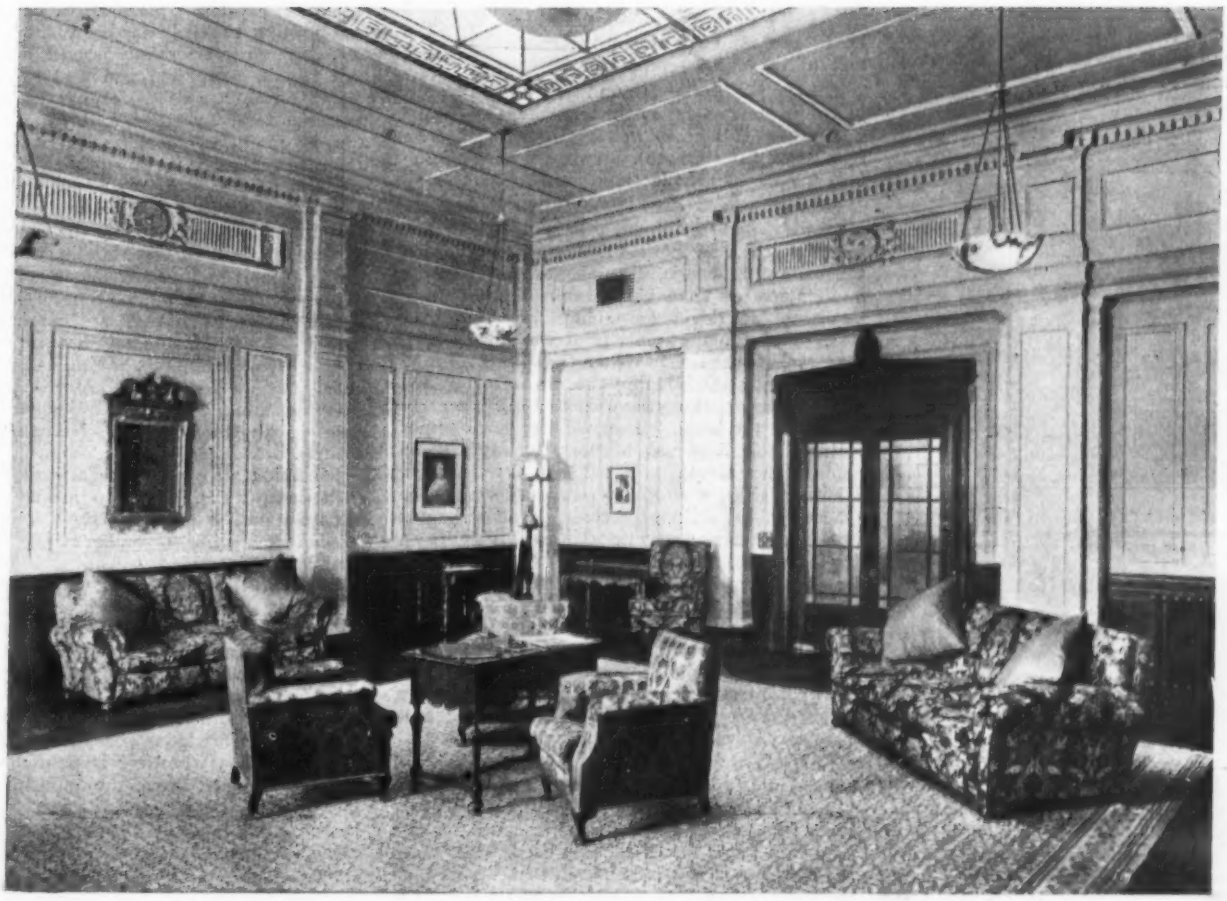


LADIES' WRITING AND TOILET ROOM : FOURTH FLOOR.

New Premises, Regent Street, for Messrs. Dickins & Jones.

MESSRS. HENRY TANNER, Architects. (*See p.* 477.)

HISTORICAL BUILDING CONSTRUCTION.—IX: PLASTERWORK.

BY MARTIN S. BRIGGS.

In the last article it was noted that, up to the nineteenth century, iron was hardly ever employed structurally in building. Of plaster it may be said that it was never structurally used. It either formed a smooth surface on internal walls, and thus provided a ground on which ornament might be painted or modelled, or else it was applied to the exterior of a building in order to increase the resistance to weather. Occasionally, as in the "parged" houses of East Anglia, it served both a utilitarian and a decorative purpose. According to its composition and its surface, it is known as "plaster," "stucco," "roughcast," and by a variety of other names.

The plaster used by the ancient Egyptians was made of burnt gypsum, and was thus the same material as our so-called "plaster-of-paris." It was applied to stone walls to fill up holes and cracks, and was then coloured to match the stone. In some of the rock-tombs where this was done the plaster has survived where the adjoining stone face has decayed. Brick walls had a hard facing of plaster one-tenth of an inch to one-sixteenth of an inch thick. On the smooth surface thus obtained were painted the beautiful frescoes that tell us so much of Egyptian life. By the period of the eighteenth dynasty the work had begun to deteriorate in quality, and whereas the plaster facing was sometimes no more than a coat of whitewash in other cases it was 2 in. or 3 in. thick to fill up jagged holes in the masonry. Plaster or stucco was also used on wooden partitions laid on a canvas base, or on reeds laced together with cords to form a primitive system of lathing. The evidence of remains proves that such plaster closely resembles our modern "three-coat work," being about ¾ in. thick and mixed with hair. Plaster was used with canvas in modelling the mask-portraits on the lids of mummy-cases. On walls and partitions modelling in very low relief was frequently done, the brilliant sunshine of Egypt always giving full value to the finest lines. Externally, plaster or stucco formed a preservative coat to brick walls. Even floors were sometimes floated in the same material, e.g., at Tel el-Amarna, which is laid on brick. According to Millar: "The first coat is of rough lime stucco about 1 in. thick, and the finishing coat of well-haired plaster about ⅛ in. thick, very smooth and fine, and showing evidence of trowelling, the setting-out lines for the painting being formed by a struck cord before the surface was set, and the painting done on fresco." This remarkable floor is in a royal palace dating from *c.* 1400 B.C., and is elaborately painted (see Plate I in Millar's "Plastering"). Even in those remote days the plasterer's tools were almost identical in form with those now used (e.g., hand-floats).

In Assyria there appears to have been little, if any, plaster used, the walls of the palaces at Nineveh being lined with glazed tiles or with slabs of gypsum or alabaster about 1 ft. thick. But stucco was largely employed during the later (Sasanian) period both internally and externally.

At Mycenae and Knossos plaster was used by the primitive Greeks and the Cretans respectively. The palace at the latter site provides examples of limestone walls with a thin coating of plaster, and the ceilings appear to have been made with reeds daubed with plaster, as in many a Cretan cottage to-day.

In the sixth article of this series it was mentioned that the Romans grained cheap woodwork in imitation of more expensive figured varieties. This shocking example of early jerry-building might appear to be matched by the Greek use of stucco on their limestone temples to produce an effect of marble, but in fairness to a race that placed so high a value on beauty one must assume that this was done only to allow of mouldings and ornament being rendered with the delicacy that the Greeks loved. This was really stucco, made with marble dust, applied in a very thin coat, and frequently decorated with painting. Remains have been found at Corinth, Aegina, Paestum, and in the great temples in Sicily.

The same material is found in Etruscan tombs in Italy, some as old as the seventeenth century B.C. Here it is one-twelfth to one-thirteenth inch thick (at Corneto), but has peeled off the tufa walls in many places, owing to damp.

In Roman *stucco duro* the craft of the plasterer reached perhaps its highest point. Of the technique of this work Vitruvius has much to tell us, and stucco is allotted more space in his famous treatise than almost any other building material. He devotes two chapters (VII, 2, and VII, 6) to the preparation of the ingredients, lime and marble. He writes that lime must be thoroughly slaked before use, in order to get rid of lumps that have not been properly burned in the kilns. If any of the lime escapes slaking it is liable to blister afterwards, thus spoiling the smooth, polished face of the stucco. He then gives a simple test to determine the efficacy of the slaking process. If a hoe be put into the mortar bed and on being withdrawn the lime sticks to it like glue, the slaking has been satisfactory. If, on the other hand, it is dry and clean, the lime must be weak and thirsty; and if it sticks to the hoe in bits, then the lime is not properly tempered. Speaking of marble, he says that certain kinds "contain transparent grains like salt, and this kind when crushed and ground is extremely serviceable in stucco work."

For the timber cradling or firring-pieces of curved plaster vaults he recommends cypress, "as fir is soon spoiled by decay and by age." He adds that common oak "warps, and causes cracks in work in which it is used." In place of lathing such as we use, he describes a method by which reeds, "previously pounded flat," are bound with "cord made of Spanish broom" to the firring-pieces in such a way as to give the desired curve. He says: "Immediately above the vaulting spread some mortar made of lime and sand, to check any drops that may fall from the the joists or from the roof." . . . "Having thus set the vaultings in their places and interwoven them, apply the rendering coat to their lower surface; then lay on the sand mortar, and afterwards polish it off with the powdered marble." Of mouldings he says: "Gypsum should not be used in their composition, but powdered marble should be laid on uniformly, lest gypsum, by setting too quickly, should keep the wall from drying uniformly."

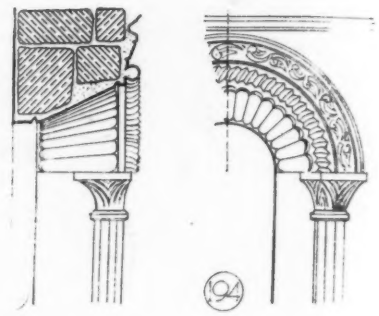
"Having finished the mouldings," he continues, "apply a very rough rendering coat to the walls, and afterwards, when the rendering coat is fairly dry, spread upon it the layers of sand mortar, exactly adjusted in length to rule and line, in height to the plummet, and at the angles to the square. The stucco will thus present a faultless appearance for paintings. When it gets fairly dry, spread on a second coat and then a third. The better the foundation of sand mortar that is laid on, the stronger and more durable will be the stucco."

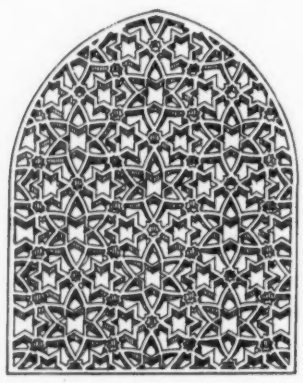
"When not less than three coats of sand mortar, besides the rendering coat, have been laid on, then we must make the mixture for the layers of powdered marble." . . . "After this powdered marble has been laid on and gets dry, lay on a medium second coat. When that has been applied and well rubbed down, spread on a finer coat. The walls, being thus rendered solid by three coats of sand mortar and as many of marble, cannot possibly be liable to cracks or to any other defect."

"And further, such walls, owing to the solid foundation given by thorough working with polishing instruments, and the smoothness of it, due to the hard and dazzling white marble, will bring out in brilliant splendour the colours that are laid on at the same time as the polishing. These colours, when they are carefully laid on stucco still wet, do not fade but are permanent. This is because the lime, having had its moisture burnt out in the kiln, becomes porous and loses its strength, and its dryness makes it take up anything that may come in contact with it."

Vitruvius also gives suggestions for dealing with damp walls, either by means of a dado 3 ft. high of mortar mixed with burnt brick instead of with sand, or by means of a cavity wall, with the cavity ventilated at the top and drained at the bottom below the level of the adjoining floor, or by other methods. Lastly he describes the construction of a dry floor for dining-rooms, with a foundation of "hard-core" 2 ft. deep, then 6 in. of "mortar" made of gravel, sand, and ashes, and finally a floated surface "smoothed off with whetstone," giving a polished black appearance. "Hence, at dinner parties, whatever is poured out of the cups, or spirted from the mouth, no sooner falls than it dries up, and the servants who wait there do not catch cold from that kind of floor, although they may go barefoot."

These extracts from Vitruvius are justified by the importance of Roman stucco. Its excellence was such that its polished surface has been compared to a mirror, and jewellers used stucco for their most delicate models. Its thickness varied greatly, being sometimes as





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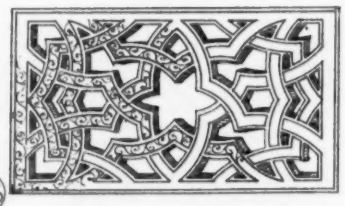

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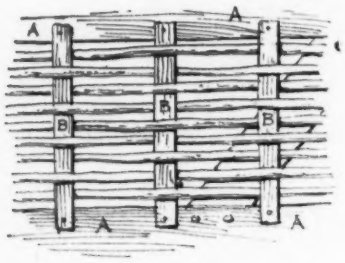

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little as $\frac{1}{16}$ in. internally and 3 in. externally. For retarding the setting various substances were used, including fig-juice, curdled milk, lard, blood, rye dough, and white of egg. Professor Lethaby says that, in Roman Britain, buildings plastered externally were coloured dark red; adding that a convex rounded fillet (concave in one example he has seen in Rome) was used at the junction of floor and walls, also at the angles of the walls. Roman fresco-painting and modelling in stucco are equally famous, and inspired most of the plasterwork of the brothers Adam.

Widespread as had been the use of stucco through the Roman Empire, the art of the plasterer was to some extent lost during the Dark Ages, but plaster is found alike in Anglo-Saxon churches in England and in Merovingian and Carlovingian churches in France, generally used to mask the irregularity of rubble masonry. Figs. 193-4 illustrate stucco details from the cloisters of the Church of Germigny-des-Prés early ninth century), the material being fine, (white, and hard, and cut with the chisel while still fresh.

In Gothic times plaster was used almost solely inside churches to provide a smooth surface for fresco-paintings on rubble wall-surfaces and vaults. But at Narbonne is a small fourteenth-century rose window in plaster, and other ornamental features such as chimney pieces are known. This reminds us that the Byzantines had employed the same material for pierced windows, cornices, and other details; while in Saracenic art stucco ornaments were freely used, from the ninth-century mosque of Ibn Tulun at Cairo onwards, those of the Alhambra being especially famous. The material was eminently suited to the fine lines required in Eastern sunlight, and appears to great advantage in the pierced windows illustrated in Figs. 195-6.

During the early stages of the Renaissance in Italy, attention was focused on the *stucco duro* of the Romans, and what had been a lost art for more than a thousand years was suddenly resuscitated, probably about 1488. Donatello mixed pounded brick and glue in his stucco, the result closely resembling terra-cotta. It was about forty years later that the new Italian fashion spread to England. All through the sixteenth century foreign craftsmen were busy in this country, but gradually the English plasterer grafted their innovations on to his own traditions. There are two remarkable early ceilings at Hampton Court, where the enterprise of Wolsey introduced many Italian novelties. In the "Watching Chamber" the ceiling is divided into panels by moulded wooden ribs, which are curved down here and there to form pendants. The ribs are secured to the joists above, as are various ornamental bosses of *papier mâché*. In "Cardinal Wolsey's Closet" wooden ribs are again used but a plain wooden boss is fixed at their intersection, with four leaves of lead springing from it.

It appears that quite early in Elizabethan times cast ornaments and mouldings were introduced. Often the ribs were cast in plaster-of-paris from reverse moulds, and such "spots" of ornament as flowers, leaves, &c., were cast, while the scrolls connecting them were modelled by hand. Mr. Bankart suggests that casting may have been done thus: "The enrichment modelled in plaster or clay, a mould being cast from the same in plaster. This mould would be soaped, varnished, or coated with some preparation to stop the suction of the plaster. A semi-liquid plaster would then be poured in, and the mould immediately applied to the ceiling and held there by a stay from the scaffolding until sufficiently set to allow of its removal, the enrichment being afterwards cleaned and touched up where needed with a small metal tool by hand."

We must now trace the parallel development of plastering among the country craftsmen. At the beginning of the thirteenth century a royal ordinance insisted that all London houses then covered with reed and rush were to be plastered, as a result of a serious fire in 1212. This so-called "wattle and daub" construction, known by many other dialect names, is illustrated in Fig. 197, and lasted up to Renaissance times. Slats or laths of cleft oak (B) were nailed to the horizontal timbers (A) of the framing, and between these were interwoven "wattles," hazel sticks $\frac{1}{2}$ in. to 1 in. in diameter, with the bark left on. To this primitive lathing was applied a thick layer of clay, mixed with straw to toughen it. The "daubers" worked one on each side of the wattle throwing on the clay until the desired thickness was reached. The next development was the addition of a plastered surface on each side of the clay, the latter material being liable to expansion and contraction under the influence of the weather.

Next came the introduction of laths, which in the Middle Ages were of cleft oak or beech, classified according to their strengths, as at the present day. The size of a lath was ordered to be 1 in. by $\frac{1}{2}$ in. in Edward III's reign, and 5 ft. by 2 in. by $\frac{1}{2}$ in. in 1528, but laths have been found as much as 4 in. wide. Often they were sprung into grooves in the timber framing. Lath and plaster "walls" were usually hollow, but were often filled in with straw or bran. Even in large houses lath and plaster ceilings only became general in the sixteenth century.

Late in the sixteenth century and early in the seventeenth another variety of plastering displaced the Italian *stucco duro* in England. This was known as "parging," or "pargetting," and consisted in the use of a mixture of lime, sand, and hair, or chopped hay and cow-dung. This was very well washed, beaten, and stirred, and thus acquired a tough and almost leathery consistency. It is found especially in Essex and Suffolk on timber-framed buildings. The surface of the plaster was often finished with roughcast or "pebble-dash" of various kinds, but in East Anglia numerous patterns are found which were made by means of a five-pronged comb with a handle, or with a pointed stick, or (in the case of fan-patterns) with a fan of pointed sticks. Some of these patterns are illustrated in Figs. 199–205. Rectangular panels, with sunk strips representing styles and rails, or with the panels themselves sunk, were often used, as well as a great variety of modelled ornament, often based on classical *motifs* though quite rustic in execution. Overhanging stories are a characteristic feature of these plastered houses in East Anglia, and Fig. 198 shows a typical example from Thaxted. In half-timber construction, early examples had the plaster set back about $\frac{1}{2}$ in. behind the timbering, next they became flush, and in late work the plaster was often carried right over the timbering so that the latter became invisible.

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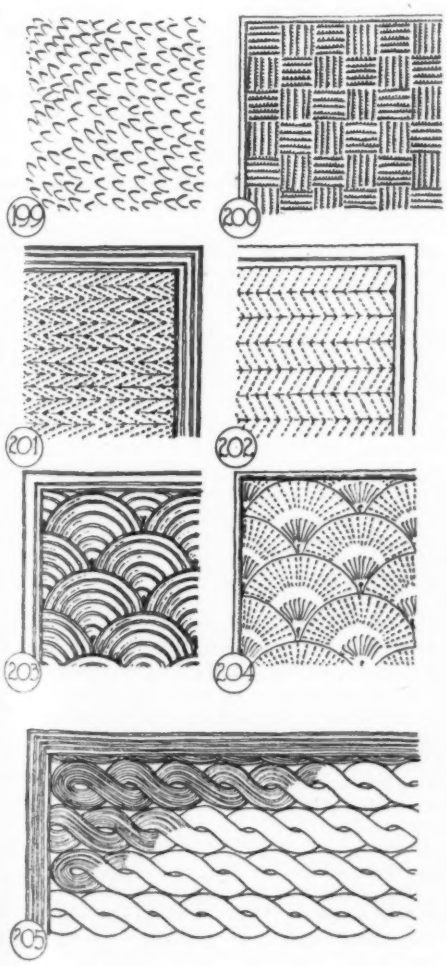
A great change in plastering methods, as in all the crafts, came in the days of Inigo Jones and Wren. Hitherto modelling had been somewhat small in scale, of slight projection (except in the case of ceiling pendants), and well suited to the material. Now came a great boldness of design, with domes, deep coves, classical cornices, coffering, and great bands of undercut fruit and flowers introduced by Grinling Gibbons. The latter ornament had stems made of lead piping and of strips of lead, while wires and hickory twigs were freely used. Much of the ornament was cast in small pieces. The architect now assumed the design of plasterwork as of all other details of the building. But it was not until the early years of the eighteenth century that plastering ceased to be a traditional craft. Then it became more and more a matter of working from "the antique," and guillochés and modillions were turned out by the mile.

But there was a brief and brilliant revival of the beautiful *stucco duro* modelling of the Romans under the brothers Adam at the end of the eighteenth century. Their designs may have been somewhat archæological, but were extraordinarily delicate and beautiful. The material used was a composition known as Liardet's preparation, in which they were financially interested, but used externally it proved a failure, and involved them in heavy losses. Their ceilings were often coloured, usually light pink or green. With the invention of Portland cement over a century ago, and the stucco period of Nash, we reach modern times.

[The illustrations accompanying this article are all specially drawn, but Nos. 193–4 are from Viollet le-Duc, No. 195 from Millar's "Plastering," Nos. 198 and 201–205 from Oliver's "East Anglia," and Nos. 199 and 200 from Jones' "Village Homes of England."]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The Church Building Society.

At the monthly meeting of the Church Building Society, held at 7, Dean's-yard, Westminster Abbey, last week (the Hon. Sir E. P. Thesiger, K.C.B., in the chair), grants were made towards enlarging, reseating or repairing the churches at Beeston-next-Mileham, S. Mary, Norfolk, £50; Blackburn, The Saviour, £175; Kilburn, S. Augustine, £75; Kingsclere Woodlands, S. Paul, Hants, £25; Platt, S. Mary, Kent, £30; and Pontypool, S. James, £100. Grants were also made from the Mission Buildings Funds towards purchasing the Mission Church of S. Thomas, Dukinfield, Cheshire, £20; and towards building S. Barnabas Mission Church, Tuffley, Gloucester, £75. The following grants were also paid for works completed at Holloway, S. Anne, £25; Dalston, S. Bartholomew, £45; Brompton, Holy Trinity, Kent, £175; and Damerham, S. George, Salisbury, £15. The sum of £689 was also paid towards repairs to 33 other churches.

THE ELEMENTS AND THEORY OF ARCHITECTURE.—VII.

(BASED UPON THE FRENCH WORK OF M. GAUDET.)

BY T. P. BENNETT, F.R.I.B.A. (*Head of the Department of Architecture, Surveying, and Building, Northern Polytechnic*).

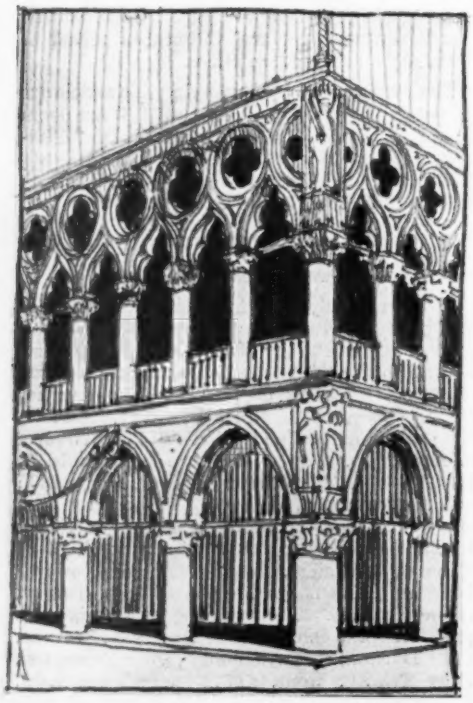
The Grouped Bay or Portico; The Order.

PORTICOES may be defined as "bays grouped in series and separated by simple supports." In principle a portico should be open, but in practice the portico is often used as the *motif* for the design of part of the façade of a building, and is then closed in and furnished with doors and windows. To study the principle of the portico it must be regarded as open.

We will first examine the pier. The simplest form for the plan of the pier is evidently the square, constructed either of stones placed one above the other or as a rectangular monolith. Upon a series of such piers are placed lintels or arches, and the portico is formed. But the square offers the least facility for passage, and its edges are liable to damage. From the square pier to the polygonal is an easy and obvious transition, and from that to the round is logical and inevitable. This development is much more probable than the copying of tree trunks in stone, often quoted as the origin of the column. It is more than a coincidence that the earliest columns have 16 flutes.

From the structural point of view all that has been said of openings in walls is true of porticoes until we come to consider end bays. Here the necessity for creating a solid support to resist thrust is at once evident, and becomes an important element in the design. In an arcade, the thrust of the intermediate arches is neutralised and converted into a vertical resultant the load of which can be readily supported by the intermediate pier or column. The thrust of the end bays has nothing to counteract it and remains an inclined force. If the angle fails and the end bay falls, each intermediate bay becomes in turn an end bay until the whole structure is demolished. Thus is furnished fresh proof of the importance of the angle. If the arch is replaced by a jointed lintel the result is the same, since no arch has so great a thrust as the flat arch.

Where the angle pier has approximately the same substance as the intermediate pier (as at the Ducal Palace, Venice) some artificial means of support must be found—in this case a line of iron tie-rods. Gaudet, John Belcher, and others have expressed themselves satisfied with this iron tie, but its existence constantly reminds the spectator of possible structural failure, and therefore destroys repose. A heavier pier at an angle is much more satisfactory. Extra thickness at the angles or end piers is not required æsthetically or practically where the thrust is absorbed by other means, as in an internal re-entering angle or an arcade between solid wings.



The Doge's Palace, Venice: Portico and Tie-Rods.

In vaulted arcades there is often an outward thrust. This is resisted in the Italian Cortile and elsewhere by iron ties across the passageway. Ties in this position are less noticeable and therefore less objectionable than when placed at the springing of the arch on the façade. If a portico is circular on plan there will not be either intermediate or end bays, and the whole (if not too large in scale) can be constructed as a stable structure without iron. The Temple de l'Amour at the Trianon, Versailles, is an example.

In addition to one-story porticoes there may be porticoes on the ground floor carrying a superstructure (as in the Ducal Palace, Venice), or those on a first or upper floor with a solid lower story (as in the Mausoleum of Halicarnassus) or in two stories (as at the ancient Palais d'Orsay, Paris, or the Court of the Farnese Palace).

Two important axioms emerge:—(1) The more 'hollow" an architectural treatment becomes, the greater the difficulty of construction; (2) in studying a plan it is absolutely necessary to study and allow for the treatment of the elevations.

The study of the portico reaches its height in the study of the orders. Before considering in detail such sub-divisions as Doric, Ionic, Corinthian, or Composite, it is advisable to examine the principles which underlie the conception and use of "the order" as an architectural element.

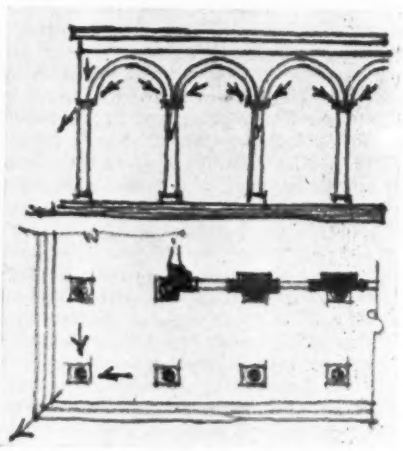
At regular distances, determined originally by the maximum span of the lintel, were disposed the shafts of the columns. We have already seen that these columns by natural development became circular on plan. The column is not, however, merely a portion of a cylinder, but is larger at the bottom than the top and slightly curved in outline. This shape is not the result of fantasy or imagination, but of logic. The lower part is more heavily loaded than the upper, and the curved line corrects an optical illusion. The logical entasis becomes ridiculous when it is continued in such a way that it reduces the diameter immediately above the base, and the effect is odious.

The columns having been placed in position it becomes necessary to reconstruct the wall; this is the function of the architrave. But if the architrave were placed directly upon the shaft of the column there would be serious danger of settlement, and therefore a capital is interposed. The capital forms the means of transition from the circular shaft of the column to a square abutment for the lintel or architrave. This transition from the circle to the square is found in all styles of architecture.

The architrave of the "orders" is simply a lintel. However much ornamentation it receives it must retain its structural character. So closely is the structural purpose of the architrave connected with that of the column that these two elements might be coupled together and the superstructure consist of the frieze and cornice only. For centuries, however, the architrave has been regarded as part of the entablature, and for the sake of uniformity it will be considered here as its first member.

The frieze is not the inevitable companion of the architrave, as some would have us believe. In the Tribune of Caryatides there is no frieze because the roof construction does not require it. If the building to be roofed has a wide span, or perhaps in some cases requires the admission of light (as will be described later), there may be a frieze above the architrave, either to cover the ends of the beams carrying the ceiling or roof and which rest upon the architrave or to allow for the openings which admit light. Above the frieze, or directly over the architrave as the case may be, occurs the cornice, a protecting course overhanging the lower portion of the structure and crowning the wall.

In the study of the order, therefore, we get these elements:—The column with a capital



Arcade, Showing Direction of Thrust.

and square abacus, but in early examples no base (the base is mainly decorative and partially obstructive), diminished, entasised, and generally fluted. Above the column—the architrave keeping its structural form of a lintel. Above this again—the cornice alone, or frieze and cornice, as circumstances require. The cymatium belongs primarily to the roof; it is the gutter.

This is a summary of the elements of the greatest, most beautiful, and most universally-used of all features in Classic architecture. It is interesting to examine the great subdivisions of this feature, the Doric, Ionic, and Corinthian orders.

THE DORIC ORDER.—The Doric is the Greek order *par excellence*. It is the most dignified, the most perfect in style. The frieze is its distinctive feature. It is, however the only feature which does not carry within itself its *raison d'être*. It is a feature which, in its position in the order, is apparently useless constructively—a phenomenon that is absolutely anti-Greek. It has been stated and may be accepted as a fact that the frieze is a copy in stone of wood forms, again something that is anti-Greek. The probable and only possible explanation is that religious veneration demanded the reproduction of forms made sacred by tradition, and when fire risk and the desire for permanent buildings made stone construction necessary the Greek architect was compelled to preserve the wood forms of the older temples. The theory of an Egyptian prototype for the triglyph is much less feasible. It may, therefore, be accepted that the triglyph and metope are unquestionably of wood origin, but whether the triglyphs represent the ends of beams is open to doubt.

In all Greek Doric temples the ceiling of the peristyle is above the frieze and on a level with the cornice. If tradition has caused the illogical representation of beam ends in stone, why has it moved the ceiling to quite a different level? The logical arrangement of the entablature would seem to be that of the Pandrosium in the Erectheion. The fact that the frieze exists requires some further explanation. In the remainder of the Doric order we see the wood prototype, yet we see it changed to suit stone construction and still logical.

The Doric column has no base, leaving the passage between the columns as free as possible. It is diminished and beautifully entasised. It has twenty channels or flutes, which are shallow

and separated by arrises instead of fillets, showing close analogy to the ancient polygonal shaft. Its construction of deep drums laid dry with perfect joints acknowledges the practical need for laying stone upon its natural bed. It is crowned by a capital with a prominent mould called an echinus, a square, solid abacus, and a few fillets, but is otherwise without enrichment. It is impossible to imagine anything more simple or more suited to its purpose. One feels that "it cannot be other than it is"—the character of all great architecture. The architrave consists of a square beam surmounted by a fillet—a typical lintel. The frieze has triglyphs and metopes. The triglyphs have vertical channels like the columns—both appearing as supporting members. The metopes are simply panels acting as filling. The most common wood prototype is that shown in the diagram.

Gaudet questions the level of the beams for reasons already referred to, and, investigating the origin of the triglyph further, takes a passage from Euripides referring to the entrance of Orestes into the temple of Diana by passing through the metopes, and, after stealing some of the treasures, returning by the same route. It is obvious that thieves would not indulge in such perilous gymnastics only to find themselves in an open portico, and Orestes must, therefore, have climbed through a metope placed in the actual wall of a temple, and in doing so must have arrived below the ceiling. The metopes then were the windows by which the temple was lighted. The triglyphs were the mullions or posts which were placed between the openings. Even in the Parthenon the metopes are rebated between the triglyphs, a possible survival of wood jointing. Alma Tadema, in one of his pictures, shows lovers passing a letter through an opened metope. This construction makes the angle triglyph the logical—and, indeed, the only possible—construction. All these points seem to confirm the theory of posts and windows. They were repeated over the peristyle for traditional reasons when this feature was added to increase the grandeur of the temple.

It is worthy of remark in passing that the mutules and the soffit of the Doric cornice slope upwards, reminiscent of the slope of the underside of the original rafters.

The study of the Doric order leads automatically to the study of the Doric temple and the use of the order in Roman and Renaissance times. The lighting of the Doric temple has been discussed at great lengths. There are three main theories: (1) Light was admitted by the door only; (2) the temple was lighted by a clerestory; (3) the centre of the roof was open and the temple hypæthral.

Both the first methods involve the problem of roofing the centre space of such a building as the Parthenon. We are practically certain that neither arches nor vaults were used, and there is no evidence to show that the Greeks employed wood trusses. That temples open to the sky were in existence seems to be definitely stated by Vitruvius in the passage, "The hypæthral temple is otherwise similar to the dipteral, but in the interior it has two rows of columns in height spaced from the walls to allow passageways, as in the portico of the peristyles. The centre is *sub diu* and without covering."

In small temples without peristyles we have seen that open metopes admitted light; in others, as in the Erectheion, there are windows. In the Parthenon there is nothing if we reject the hypæthral theory and consider lighting through the door hopelessly inadequate (as it would undoubtedly have been).

Gaudet points out that all spaces between walls and columns other than the space over the centre of the *cella* were roofable with slabs of marble without wood or other supports. If the temple was roofed with marble it would be "fireproofed," as the Gothic cathedral was afterwards fireproofed, by vaulting. If this theory is accepted the hypæthral lighting was the natural outcome of the principle of eliminating wood. If this centre space was roofed, trusses of some description must have been employed. There is, of course, no direct evidence that they were not, since all wood has long since disappeared, but a somewhat significant argument against the probability of their employment is found in the existence of the centre row of columns in the temple at Paestum, which would have been unnecessary if the truss was recognised as a medium for bridging large spans.

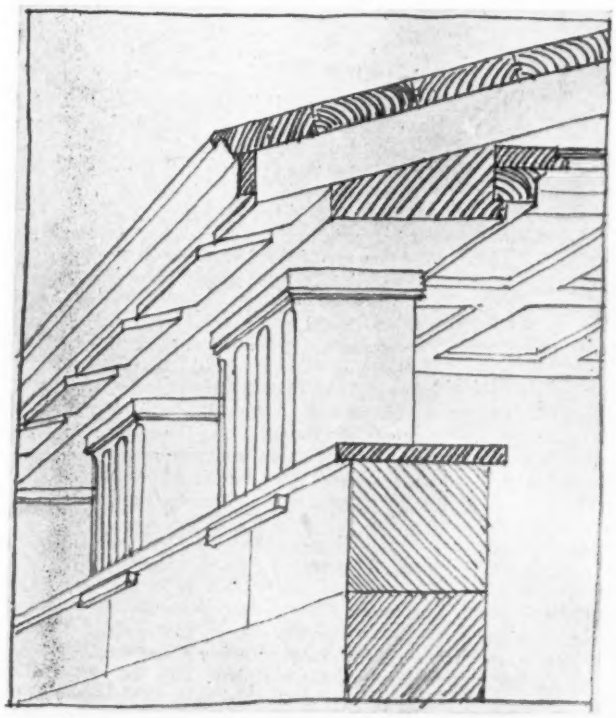
It is worthy of note in passing that much variation in proportion and detail is found in the Greek orders, and that the rigidity suggested by such works as Vignola, Normand, and others is not in accordance with fact.

In the early Roman orders the Greek prototype was closely followed, probably because the design was mostly that of Greek artists. Later the order lost its severity and some of its majesty, and its structural origin was no longer so apparent. Its column acquired a base, a moulded abacus, fillets between the flutes, and other purely ornamental features. Following the Renaissance much variety of proportion and detail comes into existence, and the Doric order proves to be universal in its appeal, unlimited in the shades of character to which it is susceptible and the possibilities of its applications. The triglyph is the typical ornament and the arbitrary governor of all column spacing and planning.

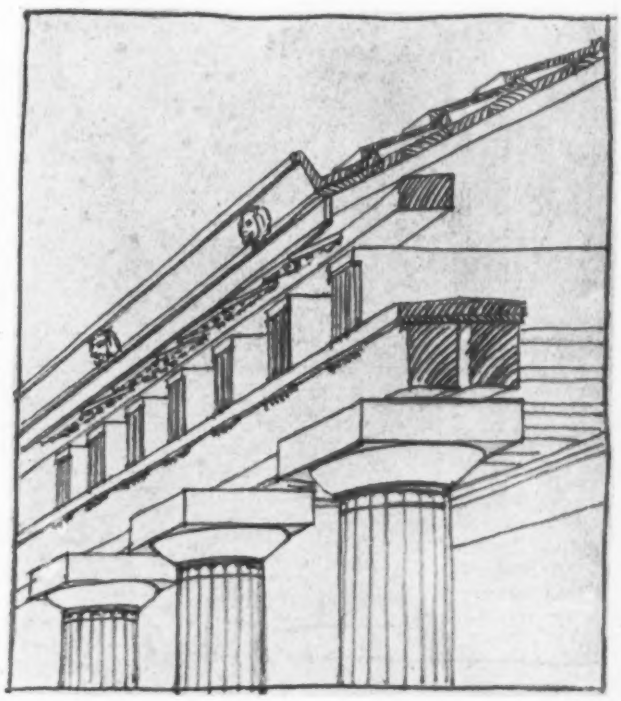
Optical corrections must not be forgotten and in the most perfect work include close spacing of angle columns, inclinations of columns to give pyramidal effect, curving of horizontal lines of mouldings and stylobate, and entasis to columns. Perfect jointing without mortar is an outstanding feature.

EARTH WALLS.

We have not heard so much recently of the various forms of wall building with the crude surface products of the soil, but if the price of brickwork is to retain its high level much longer decreased funds on all sides may revive interest in this primitive form of building. The Americans have been doing something in this connection. Beginning in a scientific manner, tensile tests of earth briquettes were made. These briquettes were prepared by tamping earth in moulds like cement and allowing it to harden. After six days' seasoning in the moulds these specimens developed a tensile strength of from 80 to 125 lb. per sq. in., and showed about the latter strength when tested in compression, but later a cube of the earth used in building developed in a couple of days a compressive strength of no less than 473 lb. per sq. in. These experiments are not put forward as of much scientific value, being but few; nevertheless, the result indicates what a considerable factor mere mechanical adhesion can be in the strength question. We are told that the best results were obtained by a mixture of one part of stiff yellow clay with two parts of loam—that is, the top soil free from roots and twigs. No lumps of clay or gravel larger than 1¼ in. diameter should be used, and smoother walls are obtainable by using a ¼-in. screen. The walls were about 18 in. thick and pressed down in wooden forms with the feet and then with sharp, light blows from a rammer 4 in. at a time. The material should be damp but not wet, and water is sprinkled on the top of each completed layer to ensure adhesion. Photographs of the little building shown in *The American Architect*, from which these particulars are taken, give very much the appearance of a building erected in concrete.



Wood Prototype of the Doric Order. By Julien Gaudet.



Wood Prototype of the Doric Order as Usually Accepted.

NOTES FROM THE MINUTES.

THE following notes are from the Minutes of the meeting of the Council of the R.I.B.A., held on March 20 :—

MEDAL FOR SCHOOLS OF ARCHITECTURE.—On the recommendation of the Board of Architectural Education, it was decided that a medal be given by the Royal Institute for the best set of drawings submitted at the Annual Exhibition by post-graduate students exempted from the Final Examination.

STREET ARCHITECTURE AWARD.—The Council approved for publication the conditions for the annual award of a medal for the best street frontage completed during the previous twelve months within a radius of four miles from Charing Cross. The conditions will be issued forthwith. The jury for the award consists of: The Earl of Crawford and Balcarres (Chairman), Sir Aston Webb, P.R.A., Mr. Paul Waterhouse, P.R.I.B.A., Sir Reginald Blomfield, R.A., and Mr. E. Guy Dawber.

DURHAM WAR MEMORIAL.—The Council decided to support the resolution passed by the Council of the Northern Architectural Association protesting against the proposed erection of the Durham war memorial in the centre of the Palace Green at Durham.

SAND-LIME BRICKS.—Mr. H. D. Searles-Wood was appointed to represent the Royal Institute on the Sectional Committee formed by the British Engineering Standards Association to prepare a British Standard Specification for sand-lime bricks.

PROFESSIONAL CLASSES AID COUNCIL.—Mr. George Hubbard was re-appointed to represent the Royal Institute on the Professional Classes Aid Council.

ROYAL GOLD MEDAL.—The Rt. Hon. Sir Frederick Ponsonby, the Keeper of the Privy Purse, informed the Council that H.M. the King had approved of the award of the Royal Gold Medal for Architecture to Mr. Thomas Hastings, of New York.

THE FINAL AND SPECIAL WAR EXAMINATIONS.

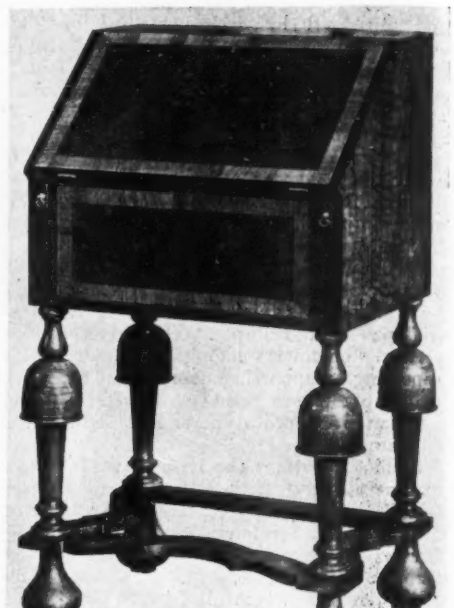
The problems in design submitted by candidates for the Final Examination and the Special War Examination will be on exhibition in the Galleries of the R.I.B.A., from March 31 to April 7, between the hours of 10 a.m. and 5 p.m.; Saturdays, 10 a.m. to 1 p.m.

THE NORFOLK AND NORWICH ASSOCIATION OF ARCHITECTS.

A new allied society of the Royal Institute, which was formed in 1921 in the County of Norfolk, and admitted by the Council of the Royal Institute in November, 1921, held its inaugural function, in the form of a banquet, in Norwich, on March 24, 1922, at which Sir Aston Webb, P.R.A., was present. Mr. Edward Boardman, F.R.I.B.A., of Norwich, was elected the first President of the Association.

THE ARCHITECTS' AND SURVEYORS' ASSISTANTS' PROFESSIONAL UNION.

IF the work of the Architects' and Surveyors' Assistants' Professional Union on behalf of the status and economic position of its members is as successful as are its efforts to promote good fellowship among them, the lot of the class for which it caters will indeed be a fortunate one in the future! The series of successful concerts, dances, whist drives, &c., which formed its winter programme, was brought to a conclusion on Wednesday last week by a smoking concert at Carr's Hotel, Strand, when some hundred or so members and friends spent an enjoyable evening under the chairmanship of Mr. W. S. Dalton. In an interval between the excellent musical programme a few short speeches were made.



Designed by MR. MAURICE S. R. ADAMS, A.R.I.B.A.

Replying for the guests (who were welcomed by the Chairman), Mr. R. Wynn Owen, A.R.I.B.A. (Chief Architect of the London and North-Western Railway) referred to the work of the Union in eulogistic terms, and said most practising architects realised that it was doing work which could not be performed by the older organisations in the profession. Mr. G. F. Carter (Borough Engineer of Croydon) also expressed his appreciation of the work of the Union, which he thought was very necessary. Mr. W. C. Keay (General Secretary of the National Federation of Professional, Technical, Administrative and Supervisory Workers) congratulated the Union on the progress it had made, and Mr. W. H. Jackson and Mr. J. A. Gould spoke of the objects of the Union. Mr. Jackson mentioned that it was proposed to organise a programme of social events for the coming summer.

Designed by MR. MAURICE S. R. ADAMS, A.R.I.B.A.

ARCHITECTS AND THE CRAFTS.

THE pieces of furniture illustrated on this page and on page 485 were designed by Mr. Maurice S. R. Adams, A.R.I.B.A., whose father, Mr. Maurice Adams, F.R.I.B.A., writing to *The Times* on the question of education, says a parent would be well advised to let his boy be taught a good mechanical trade as a craftsman, artificer, or mechanical engineer, according to his natural bent. Such experience will widen out his outlook, develop his bodily strength, and prove a good standby if the worst happens. The great Victorian church architect, William Butterfield, Royal Gold Medallist, was apprenticed to a Pimlico builder in 1831 and after he started practice worked in a smithy and executed some of his own designs for wrought-iron. Sir John Soane, R.A., was the son of a bricklayer and learned the builders' trade. His (the writer's) son had been instructed in cabinet-making at St. Paul's School, and, owing to the lack of building enterprise, has turned his attention to designing and making furniture on traditional lines, he being able at the start to do all the work himself. His venture, it is stated, is proving a great success, and he is all the better as an architect by being able to take a hand in craftsmanship. Robert Adam, the famous Scotch architect, designed and carried out the furniture for the mansions he built, such as Lansdowne House, Berkeley-square.

BOOKS.

The Story of Shoreham. By HENRY CHEAL, Hove: Combridges. Price 7s. 6d. net.

The roots of the community of Shoreham are set deep down in prehistoric times, when the neighbourhood was famous for its provision of flints for the formation of implements, and during the Roman invasion there was much activity at Shoreham and the surrounding country. During the years immediately following the Norman Conquest, the port of Shoreham was amongst the most important on the South Coast, and witnessed the comings and goings of great people.

The main industry at Shoreham was shipbuilding; indeed, except during the fifteenth century, when the French raids caused a local trade depression, this activity flourished until the 'eighties of last century. In this connection there is an entry in the Record Office of particular interest to architects, bearing the signature of Inigo Jones (who was Member of Parliament for New Shoreham), concerning a barque, the *Indeavor*, "emploied for ye space of nine months for the carriage and transportation of stone from the Isle of Portland to London for the repair of the Cathedral Church of St. Paul." This, of course, refers to the old cathedral, whose total destruction occurred in 1666.

With the churches of St. Nicholas, Old Shoreham, and of St. Mary de Haura (of the Harbour), New Shoreham, most architects will be familiar, but the book contains very full and adequate accounts of them and their contents, and also of all the other architectural works of the town, ranging from some remains of a beautiful little mediæval building at Old Ewingham to the modern "bungalow town," which, alas! to many is all that is now implied by the once-famous name of Shoreham..

We cannot close this notice without commenting upon the admirable work of the author's collaborator, Mr. A. B. Packham, who has filled the book with a profusion of delightful sketches, including careful architectural drawings, imaginative reconstructions of historical scenes, and a series of charming landscapes. Mr. Cheal has produced a monument to Shoreham that others, living amongst no less interesting surroundings, would do well to emulate.

Homework and Hobbyhorses. New Poems by Boys of the Perse School, Cambridge. Edited by H. CALDWELL COOK, M.A. (London: B. T. Batsford, Ltd.). Price 3s. 6d. net.

These collections of poetry and prose are the result of the "play" method of teaching composition, of which Mr. H. Caldwell Cook was the originator; and the results not only do him credit but have enriched English poetry with several verses of a very fine order. Many of the poems written by boys of twelve or thirteen are quite sufficiently mature to bear comparison with anything of the same character produced by writers of acknowledged merit, and some are models of brightness, freedom, and grace. It cannot be expected that all poems in a juvenile collection should attain to the standard set by the masters of English verse, and some of the poems have obviously been included in the present volume on account of their interest as childish productions, but accepted as such they are by no means lacking in interest; in fact, the book opens up the question whether children may not be the best poets after all, for their direct outlook upon their subjects, their obvious sincerity, combine with a spirit of fun that leads to the production of verse whose brightness and freshness more than atone for an occasional lapse in rhyme or metre.

The Builders' Calculator. By V. P. SMITH. (London: Crosby Lockwood & Son.) Price, 2s. 6d. net.

This small work is a complete list of carefully-worked-out tables to give the cubic contents, superficial areas, and weights of various materials. There has also been added to this new edition tables of weights of round and square and flat steel bars, angles, and channels.

THE WEEK IN PARLIAMENT.

Westminster, WEDNESDAY.

Empty Houses.

In reply to Mr. Lawson, Sir A. Mond said he could not undertake to introduce legislation to prevent houses being held for sale with vacant possession, with resultant loss of rates to local authorities.

Cost of State Houses.

Sir A. Mond informed Mr. T. Thomson that the actual total cost of the 91,864 houses which had been finished on March 1, erected by local authorities under the Government's scheme, could not yet be stated, as most of these houses were included in contracts which had not yet been completed. The average "all-in" cost was estimated at £1,100.

Subsidised Houses.

Sir A. Mond, replying to Sir C. Kinloch-Cooke, said under the Housing (Additional Powers) Act, 1919, grants had been paid in respect of 28,816 completed houses. According to the certificates received from local authorities the number of houses commenced but not yet completed was 13,000.

Sir A. Mond, answering Major Steel, said that he had on numerous occasions given the quite definite assurance that where work was undertaken by local authorities in England and Wales with the approval of his department, and, for reasons outside the control of the authority, the work could not be completed within the period fixed by the original regulations, the time for completion would be extended as might be necessary.

Sale of State Houses.

Sir A. Mond informed Mr. A. T. Davies that local authorities were requested by his department some considerable time ago to prepare schemes for the sale of houses. The question of what further steps were desirable was engaging his attention. Up to now 52 local authorities in various parts of the country had applied for permission to sell houses, but he had no information at the present moment of the number of houses actually sold by them. The Housing Act, 1919, required that the prices at which the houses were to be sold must be the best that could reasonably be obtained.

Sir R. Horne, Chancellor of the Exchequer, informed Captain Bagley that Inhabited House Duty was not chargeable where the annual value of the premises was less than £20. While the temporary fall in the value of money might increase the number of houses chargeable to the duty, the rates of duty had not been increased, and as a whole the burden of the duty in proportion to the means to pay it had diminished. As at present advised he saw no sufficient ground for proposing a revision of this duty.

HOUSING AND TOWN-PLANNING NOTES.

Housing Land Near Manchester.

Mr. J. W. Wallis, Official Arbitrator, recently heard three claims against the Irlam Urban District Council, concerning the Council's compulsory acquisition of land for houses.

The Executors of the late Mrs. Elizabeth Booth claimed in respect of an area of about 4½ acres fronting Liverpool-road.

Mr. D. O. Dunlop, surveyor, for the claimants, submitted a valuation of £1,728 8s. 5d.

Mr. Nicholson, District Valuer, on behalf of the Council, submitted a valuation of £668.

The arbitrator has awarded that the acquiring authority is to pay to the owners £977, with interest at 5 per cent. from September 7, 1920, until payment of the compensation. The acquiring authority is to pay the fees on the award, and £25 towards the owners' costs.

The Executors of the late Mr. Peter Johnson claimed in respect of just over 8½ acres of land in Fir-street. Mr. Dunlop, for claimants, submitted a valuation of £3,098 12s. Mr. Nicholson, for the Council, valued the land at £2,158. The arbitrator has awarded the owner £2,374 and interest. The acquiring authority is to pay the fees on the award, while the owner is to pay £25 towards the costs of the authority.

Mr. Henry Unsworth claimed £400 an acre for over four acres in Lord's-street, which he purchased in March, 1919, for £1,020. Mr. Dunlop, for the claimant, valued the land at £1,579 12s., while Mr. Nicholson, for the Council, detailed a valuation of £1,142. The arbitrator has awarded the owner £1,250 and interest. The acquiring authority is to pay the fees on the award, and the owner is to pay £20 towards the costs of the authority.

A Welsh Garden Village.

Another stage in the development of the Rhiwbina Garden Village, near Cardiff, was reached last week, when a recreation hall and a further 93 houses were formally opened by Mr. H. Avray Tipping, F.S.A. Mr. T. Alwyn Lloyd, F.R.I.B.A., the architect, said it was the only housing scheme in the United Kingdom carried out during the past two years which had been completed within the stipulated period—a fact upon which he congratulated the contractors, Messrs. Rogers & Davies, Ltd. A further 26 houses would be commenced as soon as the tenders were accepted.

The Cost of Working-Class Dwellings.

In an interview on Monday Sir Alfred Mond (Minister of Health) stated that the lowest quotation received for a house with three bedrooms, parlour, and kitchen was £380. Originally the cost was about £1,100.

Furniture design by MR. MAURICE S. R. ADAMS, A.R.I.B.A. (*See p.* 484.)

CENTRAL HEATING FOR DOMESTIC DWELLINGS.

SIR HENRY TANNER, F.R.I.B.A., presided on March 14 at a meeting of the Royal Sanitary Institute at Buckingham Palace-road, S.W., when Professor A. H. Barker opened a discussion on "Central Heating in Relation to Domestic and Other Dwellings."

PROFESSOR BARKER said the object of the discussion was to throw some light on the question whether, and to what extent, the system of providing the heat requirement of buildings for a centrally-placed plant could be generally adopted with advantage to the community. In order to obtain the data on which to base his conclusions he was at present engaged in conducting a series of tests on some working-class cottages placed at his disposal for the purpose by the London County Council. Each of the cottages was at present arranged on the "all gas" principle, with the double object of comparing gas with other fuels in respect of cost and to ascertain exactly how much heat was actually used for different purposes in the course of each day, so as to find the maximum and minimum use of heat for each purpose extending over various periods of the year. The experiments at present were only in their initial stages, and so far they had only been commenced in two cottages, but he was endeavouring to make arrangements whereby half a dozen or more high-class houses would be fitted in the same way, and observations of the same character taken. So far as he had gone he found the amount of heat used per day would work out at about 80,000 B.T.U. gross per individual of the working class.

He pointed out that two classes of heat were necessary, one of which might be called "high grade" and the other "low grade." High-grade or high-temperature heat was strictly necessary for lighting and for certain cooking purposes; and whatever else they did they were committed as a practical proposition to a set of gas mains, if these requirements were to be supplied without solid fuel. A very low-grade heat—heat at a temperature less than 200 deg. F.—could be supplied by means of hot-water circulation from a central point. That kind of heat was only useful for heating by radiators, and might be useful for drying and similar purposes. What might be called "medium-grade" heat could conceivably be supplied in the form of steam, but that would mean having a steam pipe connected to a centrally-placed boiler and carried to all the houses on the estate. The maintenance of a steam pipe constantly filled with steam at any pressure was a formidable proposition from the point of view of cost.

Summing up the requirements, it was necessary in any case to have a supply of high-grade heat, which involved either electrical mains or a complete outfit of gas pipes leading from the centrally-placed gasworks to each house on the estate. The alternative to that proposition was the supply of solid fuel and its attendant disadvantages, or the provision of oil for lamps or for cooking. They were thus clearly committed to at least two separate and distinct sources of supply which might be typified as (1) a set of gas mains, (2) a set of either steam or hot-water mains. It was the cost of that double supply which was such a formidable item in the calculations, for all these pipes must be accommodated somehow. The only satisfactory way in which steam or hot-water pipes could be accommodated was in a large subway, or at least a trench. The subway was unquestionably far superior to any other method, but its cost was very great. Taking all the difficulties together, and calculating the minimum cost of a proper provision of a central heating plant in each case, the totals worked out at probably £170 per house, and perhaps more, depending on the kind of house, especially when they took into account the necessity for the provision against possible breakdown. Thus the cost to provide for a return of capital outlay alone could hardly be less than about £13 per house per annum. There was also the cost of upkeep to consider. It had been closely calculated what was the minimum rent which should be charged for these facilities, and the minimum figure in a very advantageous case might be taken at somewhere about 7s. per week, or perhaps £18 per year.

It seemed that the only practicable form of centralising which would avoid both smoke and inordinate capital outlay, and would at the same time provide all the services that were required, and avoid the nuisance of carrying coal and ashes, and which would leave the cost under the control of the user, was a very general extension of the distribution of gas. Before gas could possibly take its proper place in the national economy, its price would have to be reduced to at least half or one-third of its present cost. He believed such a reduction was impossible under present conditions. It appeared that the only form in which centralising could be effectively carried out without unduly increasing the cost would be in the case of quite a few houses placed close together, say, a maximum of twelve, but usually six, which would be provided with a common heating boiler and a common hot-water supply boiler, and a set of mains, which would serve the whole of the group. That moderate degree of centralisation need not be so expensive per house as the more ambitious and more widely spread scheme. The houses should be selected fairly close together, say, in a row, the boiler being in the middle house of the row, and the occupant of that house would take care of the stoking of the boilers. Electrical power was far superior to any other form of energy, but was at present so expensive as to be quite out of court, even compared with gas, which itself was out of court compared with solid fuel in most cases. He had, therefore, most reluctantly come to the conclusion that all the idealistic schemes of centralisation were to a large extent economically impossible, except when the centralising took the form of distribution of gas, and that was economically impossible with gas at anything like its present price.

There was one other possibility which had not been explored, namely, distributing oil by means of pipes to houses. He saw no reason why that should not become a very general method of distributing heat by centralisation. The plant required to utilise it would have to be very different from the crude oil-burning appliances which they knew at the present day. The pipes necessary would be one-tenth the diameter of gas pipes, and the cost of distribution probably very small. The dangers might be great, and suitable apparatus would have to be invented to use it, but if those conditions could be overcome the use of oil might have almost all the advantages of gas without the huge cost.

MR. G. N. HADEN expressed disappointment at the views put forward by Mr. Barker, and said his firm had worked out a scheme for a district installation to serve 220 houses and found that a weekly charge of 1s. 6d. per house would cover the working costs. That, however, was about the smallest number of houses which could be supplied economically. At Manchester, two schemes for central heating were being carried out. In one for 2,000 houses they had a central boiler house, and the charge was 1s. 6d. per house. Mr. Barker's conclusions were based on the experience of two small houses, and it was not fair to allow the opinion to go forward that centralised heating was impossible. In a properly arranged system the temperature could be regulated, and his recommendation was that the charges should be subject to a rebate which would be an inducement to people not to be wasteful. He considered Mr. Barker's estimate of £150 per house for the provision of a central heating plant was too high, and in the case of the 220 houses he had referred to they put the cost of the hot-water supply at £27 and the heating supply at £50; but where heating apparatus was installed the cost of building could be reduced considerably. He believed the greatest advantage was to be gained by combining the supply of electricity with heating by the utilisation of all the heat at the generating station.

MAJOR A. J. MARTIN pointed out that for 30 years central heating had been a practical proposition in America, but in New York they were not dealing with houses built twelve to the acre. As a matter of fact they did have their own schemes of central heating in the form of gas and electricity, and he did not see how they could be improved upon. If only they could get the price of electricity and gas reduced from the present figures it would not be worth while in ordinary conditions considering schemes for central heating.

After further discussion, PROFESSOR BARKER said in the cottages in which his experiments were carried on everything was done by gas, and everything was metered. He believed he would be able to supply all the requirements for 2s. per week. Mr. Haden quoted an instance where the cost was £27 for the hot-water supply and £50 for the heating, but he would like to know how much was allowed for interest and depreciation—[Mr. Haden: Six per cent.].—They could not borrow money for six per cent., and where did the depreciation come in? He would allow 12 per cent. for interest and depreciation, and that would not include repairs, and if they took everything into account he did not think his figure of £150 would be found far wrong. He would like to see the figures of a central-heating system which had run for five years continuously. He had not been referring to houses separately supplied with boilers and radiators, but his remarks were directed to district heating. Central heating in a house if it were not overdone was a great joy, but he did not think it was good for the people who lived in the house, because he believed Nature did not intend people to be too warm.

Proposed New Buildings in the Netherlands.

H.M. Consul-General at Rotterdam has forwarded to the Department of Overseas Trade the following particulars of undertakings which may lead to openings for British trade:—

Oil Mills (Hoogkerk).—The N. V. P. R. Roelfsema's Oliefabrieken at Hoogkerk intends extending its oil mills according to plans drawn up by M. G. Eolkema, architect, of Groningen. Estimate: Gld. 100,000. The work has been given to Messrs. R. V. Dijk & Zn., at Groningen, and will soon be commenced.

Electric Power Station (Zwolle).—The N. V. Electriciteitsfabriek "Ijsselcentrale" at Zwolle is drawing up plans for the extension of its power station. A large new boiler house will be built. Work will commence in the course of this summer.

Boiler House (Groningen).—The "Provincial Electriciteitsbedrijf van Groningen" intends extending its electric power station by building a large new boiler house. Work will probably commence next autumn.

Bridge Across the Ijssel (Zwolle).—Plans have been drawn up by J. P. Walland, Chief Engineer of the Rijkswaterstaat, at Zwolle, for the construction of a large iron bridge across the Geldersche Ijssel, near Zwolle. Estimate: Gld. 1,000,000. Work will probably not be commenced before next year.

New Hospital (Sittard).—A. R. Hulshoff, engineer, of Lomanstraat 25, Amsterdam, has the plans in hand for the building of a new hospital at Sittard.

Municipal Machinery.

The Institution of Municipal and County Engineers is arranging for comparative trials of selected classes of municipal machinery, demonstrations of others, and kinematograph exhibitions of such as cannot be actually shown in operation, at its annual meeting at Cardiff next June.

LEGAL SECTION.

NOTES ON CURRENT CASES.

Extraordinary Traffic.

The case of Weston-super-Mare Urban District Council *v.* Henry Butt & Co., which has been the subject of so much litigation, has at last reached finality by the decision of the House of Lords delivered on February 21 and reported in *Weekly Notes* for March 4. We dealt with this case when it was decided by the court of first instance in our issue for January 31, 1919, and when it was decided in the Court of Appeal, in our issue for April 25, 1919; but the case came before the House of Lords in 1921, when an issue was sent down to be re-tried, and we noted the case in our issue for July 29, 1921.

The defendants in the action (appellants in the House of Lords) were quarry owners, and the question for decision was whether they had by their traffic on two roads, Upper Bristol-road from the quarries to the station, and that road and Upper Church-road from the wharf to the quarries, caused extraordinary expenses to be incurred by the local authority. The writ of the local authority was issued on February 21, 1917, and by section 12 of the Locomotive Act, 1898, proceedings to recover extraordinary expenses must be commenced within twelve months of the date at which the damage was done, which has been interpreted to mean that only such damage as was done in the twelve months preceding the issue of the writ can be recovered.

In this case, previous to 1913 the appellants had carried the stone by horse-drawn traffic, but in that year they had begun to use a steam-wagon and trailer. In the year ending March, 1913, the traffic from the appellants' quarries had amounted to about 13,52[illegible] tons, but in the year following it amounted to about 25,645 tons, of which nearly 7,000 tons had been steam-drawn. In 1915, the total weight was about 27,096 tons, of which about 13,000 tons were steam-drawn. In the year ending March, 1916, the total tonnage was about 23,000, but of this about 15,000 tons was steam-drawn. In 1916 a second steam-wagon and trailer was put on. The wagons and trailers when loaded weighed about 20 tons.

The courts below had held that the concentrated weight and the nature of the traffic was extraordinary, and that it continued so down to the commencement of these proceedings, but when the case first came before the House of Lords it was sent down to have the issue tried as to whether the traffic in question was of such a nature as, having regard to the character and functions of the two roads, was reasonably to be anticipated as coming upon them, and the court had found on this issue that before 1913 the traffic was not to be anticipated but that by 1916 (the relevant year) it was to be anticipated on Upper Bristol-road but not on Upper Church-road.

Before considering the judgment delivered in the House of Lords, it must be remembered that section 23 of the Highway and Locomotive Act, 1878, enacts: "Where by a certificate of their Surveyor it appears that, having regard to the average expense of repairing highways in the neighbourhood, extraordinary expenses have been incurred by such authority in repairing such highway by reason of the damage caused by excessive weight passing along the same, or extraordinary traffic thereon, such authority may recover . . . such expenses as may be proved to the satisfaction of the court to have been incurred. . . ."

In the judgment in the House of Lords it was stated that the two roads in question were not main highways out of Weston, but were chiefly used for light traffic in connection with the village of Milton and the golf links, and neither road had been laid out for such heavy traffic as the appellants had brought upon them. The House, in considering the section, pointed out that every road or even lane could hardly be intended to be kept in the same condition as to heavy traffic as the main roads intended for that traffic, and that the words "average expense" must be construed as referring to the average in the cases of highways which were similar to the roads in question. We may note in passing that this was the view adopted by the Court of Appeal in the case Billericay Rural District Council *v.* Poplar Union (*The Builder*, April 5, 1912).

The judgment then referred to the finding of fact on the issue sent down for trial, namely, that even on Upper Bristol-road such traffic was not to be anticipated until 1916, and on Upper Church-road not in any period relevant to this case, and then pointed out that the only change of circumstances was brought about by the appellants themselves, whose traffic had altered in character, and it did not follow that because (under the amending Act of 1898) they could not be sued for expenses which had to be incurred before 1916, what they did then either gave them the right to continue to do it without paying for fresh damage caused to the roads, or altered the nature of the regular and general traffic on the road. The House held that the traffic of the appellants did cause extraordinary expenses to be incurred, which might be taken to have been proved to amount to the £240, for which judgment had been given.

We may find it necessary to refer to this case again when it is reported in full in the Law Reports. From the reports at present available it appears the House found the weight excessive, but probably the traffic was also "extraordinary" in other respects. The case of Hill *v.* Thomas (1893, 2 K.B. 333), which we have quoted in former notes, received approval, and it may be useful to repeat one or two passages from that case:—"Extraordinary traffic, as distinct from excessive weight, will include all such continuous or repeated user of the road by a person's vehicles as is out of the common order of traffic and as may be calculated to damage the highway and increase the expenditure on its repair." "Extraordinary traffic is really a carriage of articles over the road at either one or more times which is so exceptional in the quality or quantity of articles carried or in the mode or time of user of the road as substantially to alter and increase the burden imposed by ordinary traffic on the road and to cause damage and expense thereby beyond what is common." It must be remembered, however, that extraordinary user is not necessarily unlawful, and the House pointed out that the scheme of the Act was not only to prevent unlawful user but its aim was remedial also and to provide for damage caused by legitimate and proper user. In Hill *v.* Thomas it was also pointed out that a man was not to be mulcted in damages merely because he used the road more than others, but the traffic must be extraordinary as regards the ordinary user of the road as a whole and not merely large as regards the traffic put upon it by other persons.

It will be observed that here the traffic was extraordinary as regards the ordinary user of the road as a whole, and this fact was ascertained by considering what was the ordinary traffic to be expected upon the road and then seeing if any extraordinary element had been introduced by the appellants; but the difficult point as to when an extraordinary user will become ordinary still remains unsolved. Very possibly the appellants in this case are the only persons having need for heavy traffic on these roads, but will their traffic always remain extraordinary, or what similar use by other members of the public would render it ordinary? In the case Abingdon *v.* City of Oxford Electric Tramways (117, 2 K.B. 318, *The Builder*, June 22, 1917) the Court of Appeal recognised that extraordinary traffic might become ordinary and this point was also referred to in the House of Lords in the case Barnsley British Co-operative Society *v.* Worsborough Urban District Council (1916, 1 A.C. 291), which was noted in *The Builder* for July 7, 1916, but we know of no definite decision dealing with the conversion of extraordinary user by one person into ordinary traffic, although, as we have pointed out before, the expenditure at first necessitated by the introduction of novel traffic will in time render the roads more fit for that traffic and gradually alter their character, and thus in a sense the traffic may become ordinary because the highway authority will gradually incur less extraordinary expenses.

In conclusion, we may note one other point raised in the case under consideration, as it was held that the fact that the roads in question were the only roads the appellants could use for the particular traffic was irrelevant to the point as to extraordinary user in the authority of the Barnsley case referred to above.

Specific Performance and Recision.

A point of some importance appears to have been decided in the recent case Farrant *v.* Olver (*Weekly Notes*, February 4). By an agreement in writing dated January 31, 1920, the plaintiff had agreed to sell, and the defendant had agreed to purchase, a leasehold shop and house for £1,050, and a deposit of £100 had been paid to the house-agents. The date fixed for completion was March 25, 1920, and the agreement provided that if from any cause the purchase was not then completed interest should be paid on the unpaid balance of the purchase money.

The plaintiff delivered an abstract of title and the defendant accepted the title, but took no steps to complete. On December 17, 1920, the plaintiff, through his solicitors, gave notice to the defendant that unless the matter was completed within 28 days a summons would be issued under the Vendor and Purchasers Act to forfeit the deposit. On February 4 this action was instituted, and in the statement of claim, (1) specific performance was claimed and (2), in the alternative, recision of the agreement and forfeiture of the deposit.

A defence was put in, but withdrawn before the hearing, and at the trial it was contended by the defendant's counsel that the only relief the plaintiff was entitled to was a decree for specific performance, for there was not sufficient allegation in the statement of claim to support a claim for recision, as there was nothing in the agreement to make time the essence of the contract, but later, if the defendant failed to complete, then the plaintiff could obtain recision. The court negatived those contentions, and held that the plaintiff was entitled to an order rescinding the contract and declaring the deposit forfeited, and that as between the plaintiff and the defendant the plaintiff was entitled to give a good receipt for the deposit to the stakeholders, the agents.

The court pointed out that here the contract ought to have been performed on March 25, 1920, and it was not until nearly a year later that notice was given requiring the defendant to complete within 28 days. It was not necessary that time should be made the essence of the contract where the defendant had so persistently and for so long refused to perform the contract. As regards the claim for alternative relief, the court said the ordinary rule was that a plaintiff claiming alternative relief could choose at the hearing which he would ask for, and the plaintiff in this case had at the trial asked for recision, and as he would clearly have been entitled to recision if that were the only relief claimed the alternative plea made no difference.

Rating Assessments: Equality of Rates.

A point of some interest appears to have been decided in the case Double *v.* Southampton Assessment Committee and Others (*Weekly Notes*, February 18), although we cannot refer

here to all the facts in detail. It appears that in October and November, 1919, by resolutions passed by the Assessment Committee and the Board of Guardians, valuers had been appointed to re-assess all the licensed premises, places of amusement, and riverside properties in the parish [*sic*] of Southampton. There were 454 licensed premises in the parish, and by March, 1920, only 127 had been revalued, of which the house of the appellant (the occupier who had appealed to Quarter Sessions) was one. The assessment had been raised from £60 gross to £110, and from £48 rateable value to £88, and on March 29, 1920, a supplemental valuation list was approved which contained these 127 houses which had been revalued, but not the other 327 houses. On April 9, 1920, a poor rate was made, the premises in question being assessed on the rateable value of £88. On objection being made the Assessment Committee had lowered the assessment to £100 gross and £80 rateable value, but a further objection as to the question of inequality was overruled at a subsequent sitting, and this was the point raised in this case.

The increase in value of the 127 properties as revalued was £2,773, and the increase in value of the remaining 327 properties when revalued was £2,334. If the 327 houses had been included in the rate of April, 1920, at the value at which they were subsequently assessed, the total assessable value on which that rate was made would thus have been increased by £2,334, and the effect on the amount in the pound at which that rate was calculated would have been less than a farthing in the pound; but by the inclusion of the 127 houses in the March supplementary list these houses had to bear rates on a total increase of £2,775 for the half-year covered by the rate, whilst the 327 houses escaped rates for that half-year on £2,334.

On the appeal to Sessions by the occupier, it was contended amongst other grounds that the rate was bad for inequality and unfairness, that it was bad because it was not made on an estimate of the net annual value of all the hereditaments rated, and was not made on a uniform or correct valuation of the hereditaments or upon a valuation list showing the full annual rateable value of all the hereditaments. On behalf of the Assessment Committee, it was contended that there would have been no difference in the amount payable by the owner in respect of the rate if the revaluation had been completed in time for the April rate and that the occupier was not a person aggrieved, that in including in the supplemental list approved in March the 127 houses the Committee had duly exercised its discretion under the Union Assessment Committee Acts, 1862 and 1864, and that there was no evidence that the rate was unfair.

The Recorder at Quarter Sessions had allowed the occupier's appeal, and the High Court upheld his decision, holding that the occupier was a person aggrieved, that although the Committee had a discretion for certain purposes it had no discretion to discriminate between owners of similar properties and to impose a higher rate upon some of them than upon others, and that it was plain upon the admitted facts that the assessment was unequal and unfair. The case is, of course, only shortly reported at present.

Public Authorities' Protection Act.

The recent case Edwards *v.* Metropolitan Water Board appears to emphasise the difficulties of interpreting the Public Authorities' Protection Act, 1893. Section 1 of that Act, it will be remembered, provides that where any action is commenced against "any person for any act done in pursuance or execution or intended execution of any Act of Parliament, or of any public duty or authority, or in respect of any alleged neglect or default in the execution of such Act, duty, or authority," the action shall not lie unless it is commenced within six months after the act, neglect, or default complained of.

The Metropolitan Water Board is under a duty imposed by Act of Parliament to supply water throughout a district of some 550 square miles, and to maintain the pipes conveying water, and for this purpose it was proved in this case that it has a large number of pumping, filtering, and storage depôts which have to be supplied with materials, and for this latter purpose it uses steam or petrol lorries. On September 17, 1919, one of these lorries was used to convey pipes to a depôt at Lea Bridge and to bring back empty drums and casks to Battersea, and on the return journey the lorry had run over and injured the plaintiff. The plaintiff's writ was issued on June 7, 1920 (more than six months after the accident), and the question before the Court of Appeal in this case was whether the Act applied to bar the action. This raised the point whether at the time the accident occurred the defendant's servant was acting "in execution or intended execution" of the Acts of Parliament under which it derived its powers or of any public duty, and, as we have shown in former articles (*The Builder*, November 26, 1915, and May 3, 1918), it is very difficult to determine whether the act complained of was done in direct execution of a statute or in the discharge of a public duty or merely in performing an operation which, although not *ultra vires*, is yet not directly under this statutory protection.

In the present case a distinction was attempted to be drawn between the outward journey of the lorry and its return journey when merely loaded with empties, for it was said that although when carrying pipes to the depôt the journey was being taken in execution of the public duties imposed on the defendants this was no longer the case when a lorry was returning laden with empty casks or when it returned without any load at all. The court below had held that the two journeys were one, and that the action could not be maintained as it was out of time owing to the provision in the Act; two of the three Lords Justices affirmed this judgment, holding that both journeys were undertaken in the direct execution of the public duties imposed upon the defendants. It illustrates the complication of this legislation, however, when we find that the third member of the Court of Appeal differed from this judgment and distinguished between the two journeys. The learned Lord Justice agreed that if the accident had occurred on the outward journey the lorry at that time was engaged in a work of internal management and rearrangement of stores to facilitate the direct discharge of the defendants' duties in the future, and it would have been protected by the statute, but there was more difficulty as regards the return journey, for if the lorry was sent out merely to collect empties the Lord Justice did not think that would have been a journey undertaken in direct execution of the defendants' duties. If the lorry had returned empty after delivering pipes the Lord Justice intimated it might be inferred that the lorry had been sent out in execution of the defendants' public duty, but as it came back laden with empties it was difficult to treat the two journeys as one, and as it primarily might have been sent out to collect empties the defendants, in his opinion, had not satisfied the onus of proof laid upon them of showing they were acting in direct execution of a statute, the discharge of a public duty, or the exercise of a public authority.

It has repeatedly been urged that no necessity has ever been shown for this statutory protection of public authorities, and that it is undesirable in the public interest. It is unnecessary for us to enter into this controversial point, but we may say without hesitation that if such legislation exists it ought to be framed in terms which are clear and easily understood by the public. In our former articles we have shown the difficulty experienced even in the House of Lords in interpreting this statute, and members of the public injured by public authorities are often illiterate persons of very small means. The kind of hair-splitting disclosed by this case is most undesirable, and the statute, if retained at all, should be amended and a clear definition of its scope inserted.

The House of Lords, in Bradford Corporation *v.* Myers (*The Builder*, November 26, 1915), did something towards explaining the Act by laying down that the act done "in execution of a public duty or authority" must be directly connected with a duty owed to all the public alike. In that case the Corporation had statutory powers to manufacture and sell coke, but it was not under statutory obligation to deliver coke and a negligent act done in delivery was held not within the statute. Where a public authority is under statutory obligation, say, to carry passengers, that is a duty owed to all the public alike, and a negligent action connected with the carriage of passengers will be within the statute [Lyles *v.* Southend Corporation (1905, 2 K.B. 1)].

But there are cases very near the line, as, for instance, Clayton *v.* Pontypridd Urban District Council (*The Builder*, May 3, 1918), where, although the Council was only under statutory obligation to supply gas, lay pipes, and supply meters, but not to fix the meters, and an escape of gas occurred in fixing the meter, yet the statute was held to apply.

Then, as we showed in our article of November 26, 1915, there are cases arising out of contracts made by public authorities with private individuals in order to carry out the statutory obligation laid upon the public authority, such as contracts with builders and contractors, but where the act complained of arises out of the contract and not directly out of the public duty and the statute has been held not to apply. Lastly, there are cases (of which the one discussed above is an excellent example) where it is difficult to say where the public duty begins or ends, so the path of the public dealing with public authorities is truly strewn with thorns, for not only does the statute contain a time-limit within which proceedings must be commenced, but it contains some very drastic conditions as to costs.

Rent with "Attendance."

A case of importance to those residing in residential flats is that of Nye *v.* Davis. By a lease dated January 7, 1921, the plaintiff had let to the defendant a residential flat at Hove. The lease included the use of the lessor's fixtures and the right (in common with the landlord and the tenants and occupiers of the other flats) to the use of the hall and staircase, and it was covenanted that the lessor should keep the entrance hall, the general staircase, and other common parts of the building clean and in good order and remove such house refuse as could not be burnt from the flat and carry the lessees' coals thereto once in every weekday free of charge. There was no coal cellar or refuse bin belonging to the flat.

In a claim for £62 10s., a quarter's rent, the defendant raised the contention that this exceeded the rent allowed by the Increase of Rent Act, but the plaintiff relied upon section 12 subsection 2 (1): "This Act shall not, save as otherwise expressly provided, apply to a dwelling-house *bona fide* let at a rent which includes payments in respect of board, attendance, or use of furniture."

The county court judge had held that the services specified did not constitute "attendance," and the Rent Act applied to the flat, but the divisional court reversed this judgment, holding that the words "free of charge" did not mean that the services were outside the rent but were included in what was paid as rent, and the services of the man who carried up the coals and removed the refuse constituted "attendance," and the Act did not apply to the premises.

THE BUILDING TRADE.

REDUCED OUTPUT.

We have received the following communication from Mr. T. Sumner Smith, of Manchester:

SIR,—It would seem as if we were in for a surfeit of tables of costs of building works, judging by what has appeared in your periodical recently. The table given by Mr. W. E. Garnett in your issue for the 24th instant would have been an excellent one but for the fact that it is only a hypothetical case. It is rather unfortunate that we cannot have a table derived from actual figures of costs of building works instead of a table whose foundation is largely based upon assumption. Mr. Garnett has endeavoured to prove by his table that there was a reduced output by labour at or about the end of 1920, compared with the work accomplished at or about the end of 1914, of an average of 33⅓ per cent. in all trades. The verdict, in summing up the evidence, is "not proven!"

Beginning with the foundation upon which he erects his structure, and taking one trade only (to avoid confusion), by way of illustration, he states that "carpenter" is equal to 8 per cent. of the total cost. For the purpose of demonstration, he gives £100; hence, "carpenter" costs £8, as shown by him, for every £100 expended. Of this, he says:—

Mechanics are responsible for 27 per cent.	£2	3	2
Labourers are responsible for 3 per cent.	0	4	10
Materials and plant are responsible for 70 per cent.	5	12	0
Total	£8	0	0

Now, the first thing upon which we must satisfy ourselves is—How did he arrive at the 8 per cent. as being the proportionate amount of the cost for "carpenter?" He states that "these percentages were obtained by an average of six or seven [he seems uncertain as to number] buildings of the same construction. . . ." And then he goes on, "and are divided into proportionate parts, as generally accepted in pre-war times, for mechanics, labourers, and materials and plant." Here, with regard to the latter, he shows unsoundness in his work, in taking for granted something "as generally accepted," without ascertaining whether it be true or otherwise. Again, on this, we are at issue, for if that does not hold good—upon which, be it understood, there is a large element of doubt—then his whole structure is based upon an insecure foundation. But that is a thing apart, and, irrespective of it, it will be seen on examination how weak is this claim that "carpenter" represents 8 per cent. of the total cost, inasmuch as these averages of six or seven buildings have not been obtained from a reliable source, for he says: "The £100 represented the cost of the work as would be entered for wages and materials in the contractor's prime-cost book." Had he used the words, "as had been," instead of "as would be," then there would have been some grounds for belief that the figures given by him had some practical bearing. In dealing with materials, he states, "the percentage of materials for each trade was obtained from properly-prepared bills of quantities and pricing at the current prices for the respective dates." It would be interesting to know whether the materials thus arrived at in this manner corresponded with the materials actually used in the buildings. Again, as he nowhere states how "labour" is arrived at, one can only infer that it was the balance after deducting the value of the aforesaid materials.

In this method of his there is too much uncertainty, too much liability of variability to be reliable. Anyhow, it does not matter much, for after all it is very obvious that it can only be an estimate, and a crude one at that.

If we accept this 8 per cent. for what it is worth, as being an estimated amount, it is clear that he could and should by the same means have determined the ratio in value of labour and materials in all trades, which would have given him his percentages; instead of which he relied upon those "as generally accepted." And this 8 per cent. may bear no relation whatever thereto. We cannot, therefore, be certain that this 8 per cent. (£8) is made up of 30 per cent. labour (mechanics, 27 per cent., and labourers, 3 per cent.; and 70 per cent. materials and plant, whose total value is £8. Hence, it will be seen that his second point—Table "A"—is an unreliable one, by his own method on his own showing.

Further, though they be properly-prepared bills of quantities, though they be correctly priced upon a sound basis of estimate, though the executed work agree in every particular with these quantities and value, it is self-evident that no one can from the schedule of prices alone say that labour (granted that it is 30 per cent. of the cost), in "carpenter" comprises 27 per cent. mechanic, and 3 per cent. labourer. Therefore, Table "A" has no value in fact. Perceiving that he began with an unstable foundation, it is as well to see what sort of edifice he erected thereon.

It must be borne in mind that Tables "B" and "C" are not taken from actual costs of building works in 1920. It is only fair to state that, as nowhere does he claim for them that much. What he does say is, "The wages part of Table 'B' is obtained from Table 'A,' and the wages part of Table 'C' are based on Table 'B.'" As regards materials, although he does not clearly state it (yet his tables show it), "B" and "C" are based on "A."

The percentages of increase in wages and materials in 1920 over 1914 are given by him thus: Carpenter—wages, 143½ per cent.; materials, 259⅛ per cent.

By the aid of these he builds part of his structure, using them entirely for Table "A." For Table "C," he retains the same percentage for materials, but adds 50 per cent. to that of wages, making a total of 216¼ per cent. increase (for value received) on 1914. He claims this 50 per cent. increase on Table "A," to be due to a reduction in output of work, which he says averaged 33⅓ per cent. in all trades. (Note: 33⅓ per cent. off equals 50 per cent. on.)

But upon what foundation he bases this assertion he advances no proof whatsoever; nor does there seem the slightest justification for doing so on the figures put forward by him. One might dismiss it without comment but for the fact that it may mislead others and may create mischief. Certainly this is not the way to foster understanding and goodwill. Besides, what have the members of the professions got to do with it, anyhow? It does not follow that because you happen to be an architect, engineer, or quantity surveyor, it gives you a presumptive right to meddle in wages questions, &c., in the building trade. That has always seemed to me to be an affair of the master builders' federations and the trade unions. Is there not a Wages and Conditions Council which considers and decides these matters? Are they not the parties whom it chiefly concerns? And does not common sense demand that we should not make their task more difficult?

Lest it be thought that I champion labour's cause, I wish it to be clearly understood I disclaim any such intention. However, it is reasonable to infer that Mr. Garnett implicates members of the professions by the publication of these tables, and I, as a professional man, dissociate myself from such baseless and senseless charges. Nor am I going to believe on mere statement alone that there has been a reduced output in work on the part of the workers, even when made by a master builder. What I would like to see put forth are incontrovertible facts of concrete cases. This sort of thing does not help the building trade in the least; if anything, it retards its recovery. And if this state of things goes on, the members of the professions will have only themselves to blame if they are no longer held in high esteem by the workers. Speaking generally, members of the professions have been ready and willing at all times to criticise them, and often without just cause or reason. In the housing affair it may afford the workers an ample and glorious opportunity of retaliation, should they feel inclined to take advantage of it. It has been stated that the fees paid to the profession for housing costs the workers 9d. a week in rent for a £900 cottage. If, on the top of this, they are to suffer "wages cuts," or work longer hours, or work harder to give a greater output, then they may become too poor, or lacking leisure, or too tired after the day's work to admire the beautiful gas fireplaces and art shade water-paint colours on the walls, and acclaim that it is not worth 9d. a week for work in which the pencil has not "run wild" at that. I should not wonder if the workers protested and refused to give up their weekly ounce of thick twist and pint of "four-penny" for the enjoyment of these doubtful blessings.

Mr. Garnett seems to be much concerned about the "client." That, forsooth, is a weakness on the part of some members of the professions, who, whilst professing that they will have nothing whatever to do with anything which might lower their dignity and status, nevertheless may be seen bowing before the god of mammon (wealthy client) like some abject slave. It is a pity the members of the professions are not alive to their own interest in the things that matter, and leave alone those things that do not concern them. I will cite an illustration. Some little time ago you published a chart of the Nottingham housing schemes. That chart purported to show that in every case in which contracts were based upon bills of quantities (I presume properly-prepared), they had cost considerably more than similar houses carried out by direct labour, and contracts in which there were only plans and specifications supplied. Left unchallenged, that chart stands as an indictment against the whole architectural and surveying professions, and also against the trade. If it be true, then the only construction that can be put upon it is that housing has been saddled with needless costs by quantities, or the builders were incompetent to tender on bills of quantities, or they exploited the professional classes by base usage of quantities to feather their own nests, or, if they made a profit on the other kinds of contracts, they committed an unpardonable wrong to the members of the professions by inflating the prices of contracts in which quantities formed the bases thereof. It would be useless blaming the quantity surveyors only, even were they responsible, for, according to the schedule of fees issued by the R.I.B.A. and the S.A., do not the members of such also practise as civil engineers, land surveyors, valuers, quantity surveyors, and what not?

Mr. Garnett is to be complimented on his work, for it shows merit and originality. Although he has not succeeded this time, I feel confident that eventually he will do so, provided he perseveres. I would suggest that he burn his properly-prepared bills of quantities and go to the actual execution of the work for his data. Unfortunately, as in nearly all pioneer and research work of any moment, there is not in this work any British or other Prix de Rome prizes or honours. But the pleasure in the work must be its reward. Otherwise, he will, no doubt, find it a thankless job, with more kicks than half-pennies for pay. If he be satisfied with that, it is anything but my desire to discourage him or anyone else embarking upon such a task.

NEW BUILDINGS IN LONDON.

DALSTON.—The premises occupying Nos. 17-19, Dalston-lane, recently opened for a short period as a cinema, are now being entirely reconstructed as a billiard hall. The hall will have a frontage of about 32 ft., and a depth of 36 ft., and accommodation will be provided on the basement, ground, and first floors for 14 full-size tables. The architect is Mr. Codrington, of Maryland-road, Bowes Park, N. The construction will be mainly brickwork, and the steelwork is being supplied by the Aston Construction Co., Ltd., of Eagle Wharf-road, Hoxton, N. The sub-contracts for heating, lighting, &c., have not yet been settled.

EDMONTON.—A considerable amount of concrete construction is involved in the conversion of Pymmes Brook from an open waterway into a double culvert. The brook, which runs parallel with Angel-road, is now being decked over with reinforced concrete, and when completed a macadam or other surface will be laid on top, thus making Angel-road more than double its present width. This work forms part of the North Circular Arterial Road scheme, and is being carried out by the Middlesex County Council. Messrs. Peter Lind & Co., 2, Central Buildings, Westminster, are supplying the steel reinforcement.

WALTHAM CROSS.—The proprietors of the Palace Cinema, High-road, have recently purchased a block of dwelling-houses adjoining for the purpose of alterations and enlargement of the existing premises. Demolition of the newly acquired property has not yet commenced. The Managing Director of the cinema is Mr. Cecil Clayton.

EAST CENTRAL.—The premises at 67, Queen Victoria-street, recently vacated by the General Electric Co., Ltd., are now being reconstructed and redecorated as new offices for Messrs. Baldwin's, Ltd., 3, St. Helen's-place, E.C. 3. The contractors are Messrs. Trollope & Colls, Ltd., 5, Coleman-street, E.C. 2. The plans have been prepared by Messrs. Gunton & Gunton, architects, Finsbury House, Blomfield-street, E.C. 2.

WEST CENTRAL.—Reconstruction of the interior of 175, Oxford-street, is now in progress. The work includes structural alterations and the reinforcement of the flooring with new timber so that it will take the weight of touring cars, &c., which will be exhibited by the incoming tenants. The builders are Messrs. A. Ferguson & Co., Aberdeen and London. The architect is Mr. Cunningham, 77, Great Portland-street, W.

WEST CENTRAL.—Mr. T. S. Darbyshire, A.R.I.B.A., of 43, Great Marlborough-street, W. 1, is the architect for the new premises to be erected on the site of Nos. 51 & 52, Haymarket, and not the firm mentioned in our last issue.

BRENTFORD.—A new timber storage depot is in course of erection for Messrs. G. E. Turk & Co., on a site occupying 135–136, High-street. The building, which is being constructed entirely of steelwork with a galvanised iron roof, will have a frontage of about 40 ft. and an approximate area of 13,000 sq. ft. The steelwork is being supplied and fixed by Messrs. Archibald D. Dawnay & Sons, Ltd., Battersea, S.W. 11.

The Analysis of Building Costs.

Mr. B. Price Davies asks us to state that he will send a reply to the criticism of his paper by Mr. T. Sumner Smith in our last issue in time for publication next week.

The Eight-Hour Day.

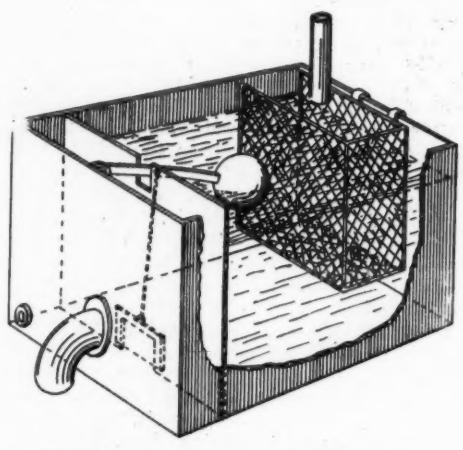
We have received a reply to the letter of Mr. G. H. Webber, of Pembroke Dock, published in our last issue from Mr. A. J. Wheeler, of Addiscombe, in the course of which he states that as an operative who is closely in touch with his fellow-workers he has not yet met a man who wishes for a return to the old system of working hours.

SANITATION FOR RURAL DWELLERS.

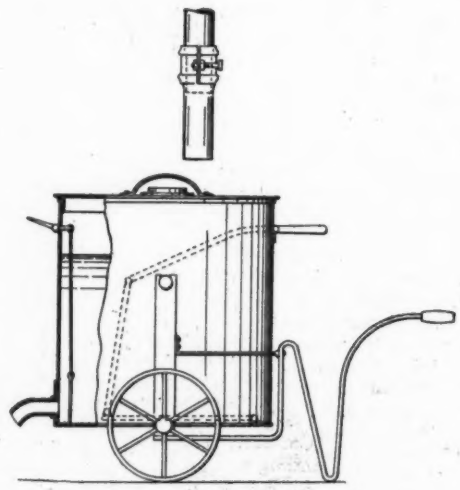
WE have received the following communication from Mr. F. W. Thompson, of Clapham :—

SIR,—Some months ago a correspondent of *The Builder* described a method of rural "sanitation with fertilisation," used and devised by himself. As the season in which this subject usually gets most attention from garden lovers and rural dwellers is here, I submit two sketches of appliances suitable for a form of "sanitation with fertilisation," which may serve some of your readers.

It would be unfair to ask for space for details, seeing the pressure on your columns. The principle used is that of the movable tub attached to the soil pipe, so that a w.c. is possible without cesspool or underground drain pipes. In addition, the sink waste can be discharged into a contrivance which catches the coarser items (for pigs, poultry, &c.), and also



Sink Waste, Grease and Sediment Holder.



Movable Tub
(WATERBARROW TYPE).

retains most of the grease. Technical readers can use home-made appliances in most cases. One authority says, "when properly managed, movable tubs or barrels are preferable to vaults or cesspools on several accounts," and that "one advantage to be credited to the primitive system of tubs or barrels is that, unlike cesspools, any leakage or overflow is easily detected."

Readers of *The Builder* are mostly associated with highly-technical matters, and will probably agree that this system implies very strictly, "Do you want it?"—with the essential addition, "Don't have it unless you do," as much depends on routine in disposal. But on the agricultural, botanical, and biological sides another aspect is presented. Mr. Basil A. Slade many years ago used the movable tub and added permanganate of potash to the contents automatically. I followed his example, but added the permanganate of potash at the time of use—a simple matter. This has a sanitary effect, and, curiously, it also adds to the value of the contents of the tub (or portable galvanised tank). So much so that our tests showed us that the experiment deserves more attention and analysis from technical men, opportunity for which was denied us both as the war took away our respective houses and gardens and thereby stopped our proceeding.

The system with permanganate of potash should effect a freshening of the soil or tilth. Mr. Slade postulates that the application is part of a sanitary routine, and that the ratio of this improvement by freshening is direct in relation to the application of the mixture, other factors being equal. The only conditions needed are reasonable regularity, and reasonable attention to elementary considerations of tillage, in the application. If oxidation processes in the beds are continuous under the routine, wider use may show more exactly how to use a fertiliser which consists of sanitary residue under oxidation.

Theoretically, this "sanitation with fertilisation" should form Nature's way of disposing of human waste for many rural dwellers, seeing the number of beneficent functions the permanganate of potash fulfils, in the mixture first, then in the growing processes as a fertiliser. To what extent would users find their ground gradually increasing its productiveness, with an accompanying sweetening or freshening under the application of a disinfectant and deodorant which works by oxidation in a sanitary routine? Have any of your readers tried the method in any form? I should be pleased to send blue prints of the appliances, with information on our use of the method, to any readers. Earth closets are equally available, where used, as the contents may be used with the permanganate in regular routine to form the fertiliser.

PETERBOROUGH & DISTRICT BUILDING TRADES' EMPLOYERS' ASSOCIATION.

THE first annual dinner of the Peterborough and District Building Trades' Employers' Association was held at Peterborough on March 18. The Chairman of the Association (Mr. T. Measures) presided, and was supported by Councillor T. L. Slater, J.P., Alderman Whitsed, Councillor M. Hooke, Messrs. S. C. Hawes, W. S. Thompson, W. H. A. Court, K. F. Leeds, V. Guttridge, B. Guttridge, O. Kettle, A. Kettle, O. Gillatt, W. Walker, C. H. Walker, C. Gray, G. E. Money, C. F. Colls, J. F. Braggins, D. Whitehouse, F. J. Stevenson, E. Watkins, S. Stafford, G. H. Barker, W. Jellings, F. Jellings, G. Brown, S. J. Hicks, F. Rippon, A. Jarman, L. Andrews, J. Sneath, J. Landin, and W. J. Adnitt (Secretary).

The toast of "The Mayor and Corporation" was proposed by Mr. W. Stuart Thompson, and responded to by Councillor Slater (Deputy-Mayor), who said the position in the building industry had not yet stabilised sufficiently to afford scope for the speculative builder, by whom a great part of the city had been built in the past.

Councillor Hooke proposed "The City and Trade of Peterborough," and Mr. A. Jarman responded.

Alderman I. Whitsed, in submitting "The Peterborough Builders' Association," said arrears of work were waiting to be done, and as Peterborough was exceptionally well-situated with bricks, sand, and gravel at its door, trade should revive there as quickly as in any other place.

Mr. Stanley Hawes responded.

The toast of "The Visitors," proposed by Mr. George Brown, was responded to by Mr. W. H. A. Court (City Engineer).

YEARLY TENANCIES.

A RECENT case, Gray *v.* Spyer (1921, 2 Ch. 549), raised some points in connection with yearly tenancies, but the facts are so complicated that they cannot be fully set out in a short note. In 1917 the then landlord had let some suites of apartments in Mount-street on an agreement for one year from March 25, 1917, but with an option to the defendant to continue as tenant on the terms of the agreement for a further period of two years on giving the landlord two-months' notice as to whether he would continue the tenancy or not. Early in 1918, before exercising this option, the defendant had written to the landlord asking if he could exercise the option for only one year but with a further option as to another year on the same terms as to notice; this was assented to. Again, in January, 1919, the defendant wrote saying he would be inclined to exercise his option for the third year, "if you will now give me an option to continue after March 25, 1920, from year to year on the same terms, provided that each year before March 25 I give you one-month's notice of my intention to continue."

The landlord assented to this, but said if the defendant thought of leaving she would be glad of two months' notice.

The effect substantially of this correspondence was reduced to a memorandum by the defendant, and this memorandum was endorsed on the agreement. On August 26, 1920, the landlord assigned the ground lease to the plaintiff in this action, and the plaintiff on September 22, 1920, gave the defendant notice to quit in March, 1921. The defendant replied by saying he had an option to continue on from year to year, an option he had exercised in February, 1920, and early in 1921 he again gave the plaintiff notice purporting to exercise the option for a further year from March, 1921. In January, 1921, the plaintiff commenced this action, claiming a declaration that the tenancy was effectually determined on March 25, 1921, by the notice to quit, but the defendant counterclaimed for a declaration that the true construction of the agreement and memorandum gave him a perpetual right to renew the tenancy from year to year. A claim by the plaintiff for rectification was not pressed at the trial.

The court commented on the form of these proceedings for a declaration only, not followed by any claim for effective relief as undesirable, but proceeded to construe the correspondence and memorandum as granting the tenant an option to continue to hold the premises as tenant after March 25, 1920, from year to year, an option exercisable once for all by merely continuing to occupy as tenant after that date, for the notices mentioned would have to be given after the tenancy was constituted, *i.e.*, in the year following; that the yearly tenancy so constituted was subject to special incidents by the two notices, the effect of which was as follows: If the tenant gave neither notice the landlord could hold him or not to the tenancy, as it suited the landlord to do. The failure of the tenant to give the two-months' notice would deprive him of the right he would otherwise have to give up the tenancy, while the failure of the one-month's notice would deprive him of the right he would otherwise have to continue it, but as regards the landlord there was no objection in law to the notices being different for one party and the other (Allison *v.* Scargall, 1920, 3 K.B. 443), and these special provisions as to notice by the tenant did not prevent the landlord from giving the regular six-months' notice to determine the tenancy; the courts in England were always against construing a covenant as conferring a right of perpetual renewal unless constrained to do so by the clear terms of that covenant. The court therefore made a declaration in the plaintiff's favour that the tenancy was effectually determined on March 25, 1921, by the notice to quit, and the defendant's counterclaim was dismissed.

Building Trade Wages.

The rates of wages in the building industry given on this page show the reduction of 2d. per hour which takes effect on April 1.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons	Bricklayers.	Carpenters, Joiners.	Plasterers	Slaters.	Plumbers	Painters	Masons' Bricklayers' Labourers.	Plasterers'
Aberdare	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Accrington	1/10	1/10	1/10	1/10	1/10	1/10	1/1	1/5	
Altrincham	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Ashton-under-Lyne	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Barnsley	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Barrow-in-Furness	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Barry	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Bath	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½	
Bedford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Birkenhead	2/2	2/2	2/2	2/2	2/2	2/2	2/2	1/9½	
Birmingham	1/10	1/10	1/10	1/10	1/10	1/11	1/10	1/5	
Bishop Auckland	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Blackburn	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Blackpool	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Bolton	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Bournemouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Bradford	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Bridgwater	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½	
Brighton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Bristol	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Burnley	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Burton-on-Trent	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
Bury	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Cambridge	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Cardiff	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Chatham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1	
Chelmsford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Cheltenham	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½	
Chester	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Chesterfield	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Colchester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Coventry	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Crewe	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
Darlington	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Derby	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Doncaster	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Dudley	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
Durham	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
East Glam. and Mon. Valleys	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Exeter	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½	
Folkestone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1	
Gloucester	1/7	1/7	1/7	1/7	1/7	1/7	1/6	1/2½	
Grantham	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
Grays	1/10	1/10	1/10	1/10	1/10	1/10½	1/9	1/5	
Grimsby	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Great Yarmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1	
Guildford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Halifax	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Harrogate	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Hartlepools	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Hastings	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1	
Hereford	1/7	1/7	1/7	1/7	1/7	1/7	1/6	1/2½	
Huddersfield	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Hull	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Ipswich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Lancaster	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Leamington Spa	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
Leeds	1/10	1/10	1/10	1/10	1/10	1/1	1/10	1/5	
Leicester	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Lichfield	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
Lincoln	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Liverpool	2/2	2/2	2/2	2/2	2/2	2/2	2/2	1/9½	
Llanelly	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
London	1/10	1/10	1/10	1/10	1/10	1/10½	1/9	1/5	
Loughborough	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Luton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Maidstone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1	
Manchester	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Mansfield	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Merthyr Tydfil	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Middlesbrough	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Newcastle-on-Tyne	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Newport, Mon.	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Northampton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
Norwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Nottingham	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Oakham	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½	
Oldham	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Oxford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Plymouth	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3½	
Pontypridd	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Portsmouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Preston	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Reading	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Rochdale	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Rochester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1	
Rugby	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
St. Albans	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
St. Helen's	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Scarborough	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
Sheffield	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Shrewsbury	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
Southampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Southend-on-Sea	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Southport	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
South Shields	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Stockport	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Stockton-on-Tees	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Stoke-on-Trent	2/0	2/0	2/0	2/0	2/0	1/11	2/0	1/7	
Stroud	1/6	1/6	1/6	1/6	1/6	1/6	1/5½	1/1½	
Sunderland	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Swansea	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Swindon	1/7	1/7	1/7	1/7	1/7	1/7	1/6	1/2½	
Taunton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Torquay	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Tunbridge Wells	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Wakefield	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Walsall	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
Warrington	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
West Bromwich	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Wigan	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Windsor	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½	
Wolverhampton	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/5	
Worcester	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	
York	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/3½	

(For rates of wages in the Building Trade in Scotland, see page 492.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

APRIL 1.—**Ashton-under-Lyne.**—PAINTING.—For painting various buildings at Stamford Park, for the Stamford Park (Joint) Committee. Mr. S. Turner, Secretary, Stamford Park.

APRIL 1.—**Manchester.**—HOUSES.—For the erection of houses on various estates for the T.C. Housing Director, Town Hall, Manchester. Deposit £1 1s.

APRIL 1.—**Worcester.**—COTTAGES.—Erection of four pairs of cottages at Kemerton, for the Tewkesbury Rural District Council. Architects, 38, Foregate-street, Worcester.

APRIL 3.—**Blaydon.**—HOUSES.—Erection of 40 houses at Chopwell, for the U.D.C. Surveyor, Blaydon. Deposit £1 1s.

APRIL 3.—**Crowan.**—HOUSE.—Erection of residence at Fraze, Crowan. Mr. A. J. Cornelius, architect, Truro.

APRIL 3.—**Drayton.**—HOUSES.—Erection of six houses at Woore, for the R.D.C. Mr. R. Matthews, architect, Parrs' Bank Chambers, Nantwich. Deposit £2 2s.

APRIL 3.—**Drighlington.**—BUNGALOW.—Erection of a bungalow in Whitehall-road, Drighlington. Mr. Charles A. Hall, architect, Whitehall-road, Drighlington.

APRIL 3.—**Farnley.**—HOUSE.—Erection of a small house at Moor Top, Farnley. Mr. Charles A. Hall, architect, Whitehall-road, Drighlington.

APRIL 3.—**Grantham.**—HOUSES.—Erection of 12 houses, for the T.C. Mr. F. O. Donaldson, Borough Architect, Guildhall, Grantham.

APRIL 3.—**London.**—PAINTING.—Cleaning and repainting of bridges at Battersea and West Brompton, including the one carrying the West London Extension Railway over the River Thames. Engineer, 7, Eastbourne-terrace, Paddington, W.2.

APRIL 3.—**Sunderland.**—PAINTING.—For the outside painting of the Central Library buildings, for the T.C. Borough Engineer, Town Hall, Sunderland.

APRIL 3.—**Various Towns.**—PAINTING.—For cleaning and repainting station buildings, bridges, &c., at South Lambeth, Old Oak Common, Didcot, Culham, &c., Paddington (Goods), &c., Kingsbridge, &c., Plymouth, Laira, &c., for the G.W.R. Co. Engineer, 7, Eastbourne-terrace, Paddington, W.2, for first four contracts, and at Plymouth (North Road) Station for the last two.

APRIL 4.—**Adwick-le-Street.**—OUTBUILDINGS.—Erection of outbuildings only to 8 cottages at Adwick-le-street, for the West Riding C.C. County Land Agent, County Hall, Wakefield.

APRIL 4.—**Bentham.**—COTTAGE.—Erection of a single cottage at Bentham. County Land Agent, County Hall, Wakefield.

APRIL 4.—**Hammersmith.**—FLOOR.—For taking up, storing, and re-erecting temporary floor over swimming bath, Lime-grove, Shepherd's Bush, W.12, for one year, for the B.C. Mr. R. H. Clucas, Engineer, Town Hall, Hammersmith, W.6.

APRIL 4.—**Lanchester.**—PUBLIC CONVENIENCE.—For erection of public convenience at Esh Winning, for the R.D.C. Mr. J. R. Lupton, Surveyor, Council Office, Lanchester.

APRIL 4.—**Llangranog.**—PAINTING, &C.—Repairing and painting the Methodist Chapel and Chapel house, Capel-Ffynon, Llangranog. Mr. A. Timothy, Maesteg House, Capel-Ffynon.

APRIL 4.—**Pool.**—OUTBUILDINGS.—Erection of outbuildings only to 16 cottages on the Harrogate-road, one mile from Pool Station, for the West Riding C.C. County Land Agent, County Hall, Wakefield.

APRIL 4.—**Swansea.**—HOUSES.—For erection of 8 houses at Clydoch, near Swansea, for the Great Western Railway. Engineer's Office, Neath Station, Neath.

APRIL 5.—**Darlington.**—HOUSES.—Erection of 24 houses on Dolan Hill, for the T.C. Mr. G. Winter, Borough Surveyor, Town Hall, Darlington. Deposit £1 1s.

APRIL 5.—**Harrogate.**—WAR MEMORIAL.—Erection of war memorial containing about 2,000 cub. ft. of Portland stone, to be erected in Prospect Gardens, Harrogate, for the Borough Council of Harrogate. Messrs. J. C. Prestwich & Sons, Bradshawgate Chambers, Leigh, Lancs. Deposit £2 2s.

APRIL 5.—**Southampton.**—PAINTING.—Internal decorations, &c., at Nos. 2, 3 and 4, Bernard-street, for the T.C. Borough Engineer, 33 and 35, French-street, Southampton. Deposit 10s. 6d.

APRIL 6.—**Bankffosfelen.**—ADDITIONS.—Additions at Council School, for the Carmarthenshire C.C. Mr. W. V. Morgan, County Architect, County Offices, Carmarthen.

APRIL 6.—**Blandford.**—HUT.—Erection of a two-classroom hut for the Blandford Secondary School. Mr. T. H. Webb, Chairman of the Governors, St. Ealdhelm's, Blandford.

APRIL 6.—**Glasgow.**—ROOF.—Renewal of the roof of the goods shed at Eglinton-street Goods Station, Glasgow. Committee's Engineer, Buchanan-street Station, Glasgow. Deposit £2 2s.

APRIL 6.—**Lanchester.**—BUNGALOWS.—Erection of 8 bungalows at Esh Winning, for the R.D.C. Mr. Thomas E. Taylor, Llc.R.I.B.A., Union Offices, Lanchester.

APRIL 6.—**London.**—EXTENSION.—Adaptation as an extension of the Eastern Fever Hospital, of the Institution known as the City of London Infirmary, for the Metropolitan Asylums Board. Mr. Duncombe Mann, Clerk, Offices, Embankment, E.C. Deposit £3.

APRIL 6.—**Newcastle-on-Tyne.**—SHELTER.—For erection of bowling green shelter in Scotswood Park, Denton-road, for the T.C. City Engineer, Newcastle-upon-Tyne.

APRIL 7.—**Ardee.**—REPAIRS.—Re-roofing and plastering the R.C. Church, Reagstown, Parish of Tallanstown, near Ardee, County Louth. Messrs. William H. Byrne & Son, Architects, 20, Suffolk-street, Dublin.

✱APRIL 7.—**Portsmouth and Plymouth.**—NAVAL MEMORIALS.—Erection of three Naval Memorials at Chatham, Portsmouth and Plymouth, for the Imperial War Graves Commission. The Secretary (Works Branch), Naval Memorial Contracts, The Imperial War Graves Commission, 82, Baker-street, London, W.1.

APRIL 7.—**Stafford.**—PAINTING.—Painting the working-class dwellings in Crooked Bridge-road, for the T.C. Mr. W. Plant, Borough Engineer, Stafford.

APRIL 8.—**Drighlington.**—ALTERATIONS.—Alterations to the No. 3 Branch Stores for the Drighlington Co-operative Industrial Society, Ltd. Mr. Charles A. Hall, architect, Whitehall-road, Drighlington.

APRIL 8.—**Edinburgh.**—VARIOUS WORKS.—For various works in connection with the maintenance of city property, for the T.C. Architect's Department, City Chambers, Edinburgh.

APRIL 8.—**Leeds.**—PAINTING.—For painting and cleaning at the Infectious Diseases Hospital, Seacroft Killingbeck Farm, and the Tuberculosis Sanatorium, Killingbeck, for the T.C. Steward's Office, Seacroft Hospital.

APRIL 8.—**Penge.**—HOUSES.—Erection of 22 (A) type and 28 (B3) type houses at the Chesham Park Housing Site, for the U.D.C. Lieut.-Col. H. W. Longdin, Architect, Town Hall, Penge. Deposit £3 3s.

✱APRIL 10.—**Brierley.**—HOUSES.—Erection of 25 non-parlour type houses on the Council's housing site 2, Mill-street site for the U.D.C. Mr. H. E. Farmer, Council's Architect, 32, Paradise-street, Birmingham.

APRIL 10.—**Conisborough.**—CONVENIENCES.—Erection of public conveniences at Denaby Main, for the U.D.C. Mr. H. Thirlwall, Surveyor, Church-street, Conisborough. Deposit £2 2s.

APRIL 10.—**Newcastle-on-Tyne.**—ALTERATIONS.—Alterations to Elswick Hall, Elswick Park, for the T.C. City Engineer's Office, Town Hall, Newcastle-on-Tyne.

✱APRIL 11.—**St. Albans.**—PUBLIC CONVENIENCES.—Construction of underground public conveniences in front of the Town Hall, St. Albans. City Engineer and Surveyor, 96, Victoria-street, St. Albans.

APRIL 11.—**Stourbridge.**—HOUSES.—Erection of A and B type houses on the "Grange Estate Housing Scheme," exactly of the types that have been, or are being erected for the Borough Council of Stourbridge. Mr. Fredk. Woodward, Housing Director, Borough of Stourbridge, Market-street, Stourbridge.

APRIL 11.—**Wandsworth.**—PAINTING.—For internal painting at St. John's Hospital, St. John's Hill, Wandsworth, S.W., for the Board of Guardians. Mr. F. J. Curtis, Clerk, St. John's-hill, Wandsworth, S.W.18. Deposit £2.

APRIL 12.—**Braintree.**—WALLS.—For rebuilding retaining walls adjoining Clap Bridge, Braintree, for the Essex C.C. Mr. P. J. Sheldon, County Surveyor, Chelmsford.

✱APRIL 12.—**Twickenham.**—STRUCTURAL ALTERATIONS, DECORATIONS, AND REPAIRS.—Structural alterations, external and internal decorations, and repairs, at Hedingham House, Hampton-road, Twickenham, for the U.D.C. Mr. Fred. W. Pearce, Surveyor to the Council, Town Hall, Twickenham.

APRIL 12.—**Wandsworth.**—FENCING.—Providing and fixing oak pale fencing (approximate length 219 ft.) at St. James' Hospital, Ouseley-road, Balham, for the Wandsworth Board of Guardians. Mr. F. J. Curtis, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.18.

APRIL 15.—**Ashington.**—PREMISES.—Erection of new branch premises at Seaton Hirst, Ashington, for the Ashington Industrial Co-operative Society, Ltd. Messrs. Harrison, Ash & Blythe, architects, 22, Ellison-place, Newcastle-on-Tyne.

APRIL 19.—**Bournemouth.**—COTTAGES, &C.—Erection of eight pairs of cottages, piggeries, &c., at Muccleshell. Mr. A. L. Roberts, County Architect, The Castle, Winchester. Deposit £1 1s.

✱APRIL 19.—**Sowerby Bridge.**—BUILDING.—Erection of a new Post Office at Sowerby Bridge, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s.

APRIL 19.—**Truro.**—LOCK GATES.—Construction of lock gates for flushing purposes, concrete piers, and other work, at Boscawen Bridge, for the T.C. Mr. F. A. Barnes, City Engineer, Municipal Buildings, Truro.

NO DATE.—**Denton.**—CLUB HOUSE.—Erection of the proposed new club house, for the Denton Golf Club. Messrs. Thorpe & Collier, architects, 66, Deansgate, Manchester. Deposit £1 11s. 6d.

NO DATE.—**Dumbarton.**—PAINTING.—Painter work within the County Buildings. Mr. Joseph Weekes, architect, 88, College-street, Dumbarton. Deposit £1 1s.

NO DATE.—**King's Lynn.**—HOUSE.—Erection of a house at Middle Drove. Mr. Louis F. Eagleton, architect, King-street, King's Lynn.

NO DATE.—**Leeds.**—HOUSE, &C.—Erection of detached house, surgery, and fence walls, in Lavender-walk, Upper Accommodation-road, Leeds. Messrs. Fred Mitchell & Sons, architects, 9, Upper Fountaine-street, Albion-street, Leeds.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons Bricklayers' Labourers	Plasterers
Aberdeen	1/10½	1/10½	1/9	1/9	1/9	1/9	1/7	1/5½ to 1/6½	
Airdrie	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—	1/7½	
Alexandria	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—	1/7½	
Arbroath	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/5½	
Ayr	2/0	2/0	2/0	2/0	2/0	2/0	1/9	1/5½ to 1/6½	
Bathgate	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/9	1/5½ to 1/6½	
†Blairgowrie	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	—	—	
Bo'ness	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/-	1/8	
Coatbridge	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—	1/7½	
Dumbarton	2/0	2/0	2/0	2/0	2/0	2/0	1/9	1/7½	
Dumfries	1/10	1/10	1/10	1/10	1/10	1/11½	1/8	1/4½ 1/4½	1/5½
Dundee	2,0	2/0	2/0	2/0	2/0	2/0	1/9	1/7	
Dunfermline	2/0½	2/0½	2/0	2/0	2/0½	2/0½	—	1/7½	
Duns	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/0	
Edinburgh	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—	1/7½	
Falkirk	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—	1/7½	
Fort William	1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/2½	
Galashiels	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	—	—	
Glasgow	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/1	1/7½	
Greenock	2/0½	2/0½	2/0	2/0	2/0½	2/0	1/9	1/4½ to 1/7½	
Hamilton	2/0	2/0	2/0	2/0	2/0	2/0	1/9	1/7½	
Hawick	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/8	1/3½	
Helensburgh	2/0½	2/0½	2/0	2/0½	2/0½	2/0	1/9	1/7½	
‡Inverness	1/11½	—	‡	1/7	1/6½	1/9	1/6	1/0 to 1/3	
Kilmarnock	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/1	1/7	
Kirkcaldy	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—	1/6½	
Kirkwall	1/9	1/9	1/9	1/9	1/9	1/9	—	1/2	
Lanark	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—	1/7	
Motherwell	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—	1/7½	
Perth	2/0	2/0	2/0	2/0	2/0	2/0	1/9	1 6½	
Stirling	2/0	2/0	2/0	2/0	2/0	2/0	1/9	1/7	
Stirlingshire (Eastern District)	2/0	2/0	2/0	2/0	2/0	2/0	1/9	1/7	
Wishaw	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	—	1/7½	

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 491. † For housing work only; for other work, Masons 1/8, Painters 1/7, Labourers 1/- to 1/4. ‡ Masons and Carpenters on strike. § Under unemployment relief scheme, 11d.

NO DATE.—**Ossett.**—PAINTING.—Painting and decoration of the Conservative Club. Secretary, Newstreet, Ossett.

NO DATE.—**Wakefield.**—REPAIRS, &C.—Repairs and renovations to Court Houses, Police Stations, Lock-ups, &c., throughout the Administrative County of the West Riding of Yorkshire. Mr. Percy O. Platts, County Architect, Wakefield.

NO DATE.—**Worksop.**—ALTERATIONS.—Alterations and additions to St. George's Church, Woodsetts, Worksop. Mr. A. E. Turnell, 82, Riverdale-road, Sheffield.

FURNITURE, MATERIALS, etc.

APRIL 1.—**Brentford.**—ROAD MATERIAL.—Supply of ballast, cement, &c., to the U.D.C. Mr. J. W. Westlake, Surveyor, Boston-road, Brentford.

APRIL 1.—**Saltcoats.**—GALVANISED BUCKETS.—For the supply of 500 circular refuse galvanised buckets, for the T.C. Burgh Surveyor, Town Hall, Saltcoats.

APRIL 3.—**Bethnal Green.**—FURNITURE.—Supply of (1) furniture and fittings, (2) 182 oak and mahogany chairs at the new Public Library, Bethnal House, for the B.C. Borough Engineer, Cambridge-road, E.2.

APRIL 3.—**Dorking.**—MATERIALS.—Supply of blast urnace slag and refined tar to the U.D.C. Mr. S. S. Gettings, Surveyor, Council Offices, Dorking.

APRIL 3.—**Durham.**—ROAD MATERIALS.—For supply of road and other materials for one year, for the C.C. Mr. A. E. Brooks, Surveyor, Shire Hall, Durham.

APRIL 3.—**Hertford.**—MATERIALS.—Supply of road and other materials to the T.C. Borough Surveyor, The Castle, Hertford.

APRIL 3.—**Ramsey.**—ROAD MATERIALS.—For supply of road materials, for the U.D.C. Mr. R. F. Serjeant, Clerk, Council Offices, Ramsey, Huntingdonshire.

APRIL 3.—**Rhondda.**—MATERIALS.—Supply of white lump lime, acid, fire bricks and retorts, silica bricks, oils, &c., to the U.D.C. Mr. Octavius Thomas, Gas and Water Offices, Pentre, Rhondda.

APRIL 3.—**Warrington.**—GRANITE SETTS.—Supply of Dalbeattie and Newry cubes and setts, for the T.C. Mr. Andrew M. Ker, Borough Engineer, Warrington.

APRIL 4.—**Leicester.**—MATERIALS.—Supply of road and other materials to the T.C. Mr. E. G. Mawbey, City Engineer, Town Hall, Leicester.

APRIL 5.—**Hollingbourne.**—ROAD MATERIAL.—Supply of road material to the R.D.C. Mr. F. Miskin, Clerk, 33, Earl-street, Maidstone.

APRIL 8.—**Glasgow.**—MATERIALS.—Stores for the Gas Department of the T.C. General Manager, Gas Department, 45, John-street, Glasgow.

APRIL 8.—**Oakham.**—MATERIALS.—Road materials for the Rutland County Council. Mr. B. A. Adam, Clerk, Oakham.

APRIL 13.—**Greenwich.**—PAVING.—Supply of 3,000 ft. super. of York stone paving, to the B.C. Borough Engineer, Town Hall, Greenwich, S.E. 10.

APRIL 17.—**Tenterden.**—ROAD MATERIALS.—For supply of road and other materials, for the T.C. Mr. W. L. C. Turner, Surveyor, Town Hall, Tenterden.

APRIL 24.—**Warrington.**—ASHBINS.—Supply of 500 galvanised steel ashbins, for the T.C. Cleansing Superintendent, Central Sanitary Depot, Howley.

ENGINEERING, IRON AND STEEL.

APRIL 3.—**Belfast.**—JETTY.—For construction of a reinforced concrete jetty and dolphins at the New Oil Berth, Musgrave Channel Co., for the Harbour Commissioners. Mr. T. T. Gilbert, Engineer, Harbour Office, Belfast.

APRIL 3.—**Cheadle and Gatley.**—MAINS, &C.—For extra high pressure, medium pressure, and low pressure mains and street lighting accessories. Mr. C. H. Wordingham, Engineer, 7, Victoria-street, S.W.1. Deposit £3 3s.

APRIL 3.—**Margate.**—PUMPS.—For supply and erection of two belt-driven vertical ram pumps and two horizontal twin gas engines for sewage pumping, for the T.C. Mr. E. A. Borg, Engineer, 13, Grosvenor-place, Margate.

APRIL 3.—**Shoreham-by-Sea.**—BRIDGE.—Reconstruction of Norfolk Bridge, over River Adur, at Shoreham-by-Sea, for the West Sussex C.C. Messrs. Howard Humphreys & Sons, engineers, 28, Victoria-street, S.W.1. Deposit £10 10s.

APRIL 3.—**Wigan.**—FOUNDATIONS, ETC.—Construction of a circulating water conduit and engine foundations, etc., at the Electricity Works. Mr. R. B. Donald, Municipal Buildings, Library Street, Wigan.

APRIL 4.—**Edinburgh.**—HAMMER.—Supply of one 5 cwt. pneumatic power hammer to the Tramways Dept. Tramways Manager, 2, St. James-square, Edinburgh.

APRIL 4.—**Littlemore.**—VIADUCT.—Reconstruction of Kennington Viaduct over the River Thames, near Littlemore, for the G.W.R. Co. Engineer, Paddington Station, W.

APRIL 4.—**London.**—GIRDERS, ETC.—Supply to the Great Western Railway Co. of about 330 tons of steel girders and other steel and ironwork of British manufacture. Engineer, Paddington Station, W.

APRIL 4.—**London.**—RAILWAY MATERIALS.—For the supply of (1) 10,910 picks, shovels and phowrahs, (2) 118 tons red and white lead, (3) 22,320 lineal yards canvas and bunting, (4) 217 tons spring steel, (5) 22,384 files, (6) 69 tons metals (zinc, aluminium, antimony, brass, copper, lead and nickel), for the Madras and Southern Mahratta Railway Co., Ltd. Secretary, Offices, 25, Buckingham Palace-road, Westminster, S.W.1. Charge £1 1s.

APRIL 4.—**Rochdale.**—RIVER WORKS.—For inverting in concrete the bed of the River Roch from Newgate to Theatre-street, and also for the covering of the River Roch from Newgate to Theatre-street with ferro-concrete, for the T.C. Mr. S. H. Morgan, Borough Surveyor, Town Hall, Rochdale. Deposit £5.

APRIL 4.—**Shoeburyness.**—TOWER SCRUBBER.—For supply and erection of a tower scrubber, for the U.D.C. Engineer, Gasworks, Shoeburyness.

APRIL 5.—**Biddulph.**—BOILER.—For the supply of a vertical cross tube boiler for the Gasworks. Mr. E. A. Plant, Clerk, 3, Chapel-street, Congleton.

APRIL 5.—**Chichester.**—PUMPING MACHINERY.—Supply of pumping machinery at pumping station, for the T.C. Mr. J. F. Cobley, City Engineer, Chichester. Deposit £4 4s.

APRIL 5.—**London.**—ROLLING STOCK.—For the supply of open and covered goods wagons, wheels and axles and wheel lathes, for the East Indian Railway. Mr. G. E. Lillie, Secretary, Nicholas-lane, E.C.4. Charge £1 1s.

APRIL 6.—**Manchester.**—BOILER.—For the supply of one mild steel vertical crane boiler at the Rochdale-road Gasworks, for the T.C. Mr. G. W. Kaye, Secretary, Gas Department, Town Hall, Manchester.

APRIL 6.—**Manchester.**—ENTRANCE GATES.—For the construction and erection of wrought iron or steel entrance gates at the Bradford-road Gasworks, for the T.C. Mr. G. W. Kaye, Secretary, Gas Department, Town Hall, Manchester.

APRIL 6.—**Roxburgh.**—BRIDGE.—Construction of a bridge over the Rule Water at Spittal, about 7 miles from Hawick, with approaches, for the Roxburgh C.C. Mr. James P. Alison, F.R.I.B.A., 45, Bridge-street, Hawick. Deposit £2 2s.

APRIL 7.—**London.**—MATERIALS.—Supply to the High Commissioner for India of cells, electric, inert; cell, Leclanche, and spare parts; nails, iron, wire. Director-General, India Store Department, Belvedere-road, Lambeth, S.E.1.

APRIL 8.—**Pembrokeshire.**—BRIDGES.—Construction of ferro-concrete bridge and other works on the Hennebique system at Treffgarne and Velindre, for the Pembrokeshire C.C. Mr. A. H. Thomas, County Surveyor, Haverfordwest. Deposit £2 2s.

APRIL 10.—**Leicester.**—PUMPING MACHINERY.—For supply of gas or oil engines and pumps, for Water Dept. Mr. G. T. Edwards, Engineer, Waterworks Offices, Leicester. Deposit £5.

APRIL 10.—**London.**—CONVEYOR.—Supply and erection of (*a*) an ash conveyor of the water immersed, drag-link type; (*b*) an ash hopper. Clerk, County Hall, Spring-gardens, S.W. Deposit £2.

APRIL 10.—**London.**—RAILWAY MATERIAL.—Supply to the Bengal-Nagpur Railway Company of open and covered goods wagons and brake van underframes, 2 ft. 6 in. gauge. Offices, 132, Gresham-house, Old Broad-street, London, E.C.2. Charge £1 1s.

APRIL 10.—**Siam.**—RAILWAY ACCESSORIES.—**Supply of accessories for goods rolling stock, to the Siam State Railways.** Messrs C. P. Sandberg, 40, Grosvenor-gardens, London, S.W.1. Charge £2.

APRIL 12.—**Wandsworth.**—ELECTRIC LIGHTING, ETC.—Installation of electric lighting and fire alarms at the Intermediate Schools, Swaffield-road, for the Board of Guardians. Mr. F. J. Curtis, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W. 18. Deposit £2.

APRIL 12.—**Wolverhampton.**—ELECTRIC INSTALLATION.—For installing electric cables and mains at the Poor Law Institution, for the Board of Guardians. Mr. Frank Harrison, Clerk, Poor Law Offices, Wolverhampton. Deposit £3 3s.

APRIL 15.—**Newcastle-on-Tyne.**—BRIDGE REPAIRS.—Repair of the girder work of the swinging portion of the Newcastle Swing Bridge, for the Tyne Improvement Commissioners. Mr. J. McD. Manson, General Manager, Tyne Improvement Commission, Newcastle-upon-Tyne. Deposit £2 2s.

APRIL 21.—**Portsmouth.**—SEWAGE WORKS.—Construction of brick culverts, detritus and screen chambers, suction culvert, pump foundations and buildings and other works at the Sewage Pumping Station at Eastney, for the T.C. Mr. G. Midgley Taylor, 36, Victoria-street, Westminster, S.W. 1. Deposit £5.

MAY 7.—**Rochdale.**—SULPHATE OF AMMONIA PLANT.—**Supply and erection of sulphate of ammonia plant, for the Gas Committee.** Chairman, Gas Committee, Gas Works, Rochdale.

MAY 20.—**Enniskillen.**—RAILS.—Supply to the Sligo, Leitrim and Northern Counties Railway Company of 240 tons of British Standard flat-bottom steel rails, with fishplates. Secretary, S.L. and N.C. Railway, Enniskillen.

JUNE 19.—**Argentina.**—BRIDGES.—**Supply and erection of suspension bridges for local authorities.** Dept. of Overseas Trade, 35, Old Queen-street, S.W.

AUGUST 1.—**Siam.**—RAILWAY CARRIAGES.—For the supply of 25 underframes for bogie carriages, for the Department of State Railways. Messrs. C. P. Sandberg, 40, Grosvenor-gardens, S.W.1. Charge £2.

OCTOBER 31.—**New South Wales.**—BRIDGE.—**Construction of the superstructure and substructure of a cantilever bridge across Sydney Harbour from Dawes Point to Milson's Point, for the Government of New South Wales.** Agent-General for New South Wales, Australia House, Strand, London, W.C.2.

NO DATE.—**Dumbarton.**—ELECTRIC LIGHTING.—For electric lighting works at County Buildings. Mr. J. Weekes, 88, College-street, Dumbarton. Deposit £1 1s.

ROAD, SANITARY, AND WATER WORKS.

APRIL 1.—**Stafford.**—WATERWORKS.—For laying 4,200 yards of cast-iron pipes and castings, for the T.C. Mr. W. Plant, Engineer, Borough Hall, Stafford. Deposit £2 2s.

APRIL 3.—**Blything.**—ROADS.—For steam rolling required to be done on the district roads, for the R.D.C. Mr. H. R. Buddery, Clerk, Offices, Bulcamp, Halesworth.

APRIL 3.—**Darton.**—SEWER.—Construction of about 1,550 lineal yards of 9 in. earthenware pipe sewers, with manholes, for the U.D.C. Mr. Samuel Wilkinson, Surveyor, Council Offices, Darton. Deposit £1 1s.

APRIL 3.—**Prestonpans.**—WATER MAIN.—Construction for the Prestonpans Combination Water Trust, of an 8 in. main from Penston Service Reservoir. Mr. R. Tulloch, Cockenzie.

APRIL 3.—**Samford.**—WATER SUPPLY.—Providing a water supply in the Parish of Raydon by means of a ram, laying water mains, and providing and erecting a water tank, for the R.D.C. Mr. A. J. Haward, Clerk, 5, Museum-street, Ipswich.

APRIL 3.—**Sleaford.**—ROADS.—Tar-spraying about 70,000 super. yards of roads, for the U.D.C. Mr. J. W. Bell, Clerk, 27, Carre-street, Sleaford.

APRIL 4.—**Brentford, etc.**—DREDGING.—Dredging of Chelsea and Brentford Docks and Chelsea Creek, for the G.W.R. Co. Engineer, 7, Eastbourne-terrace, Paddington, W. 2.

APRIL 4.—**Failsworth.**—CULVERT.—Construction of about 356 lineal feet of brick and concrete culvert. 8 ft. 6 in. diameter, for the U.D.C. Messrs. Charles J. Lomax & Son, Engineers, 37, Cross-street, Manchester. Deposit £1 1s.

APRIL 4.—**Frinton-on-Sea.**—ROADS.—Re-surfacing and improving four highways for the U.D.C. Surveyor, Frinton-on-Sea.

APRIL 5.—**Blyth.**—WELL.—Sinking of a well, 55 to 60 feet deep by 3 ft. 6 in. finished diameter, for the Gas Co. Manager, Gas Works, Blyth.

APRIL 5.—**Hove.**—TENNIS COURTS.—Laying 3 tarred macadam lawn tennis courts on the Western Lawns, for the T.C. Mr. H. H. Scott, Borough Surveyor, Town Hall, Hove.

APRIL 5.—**Llandaff.**—SEWERS.—Construction of 122 lineal yards of 9 in. earthenware pipe sewers, etc., for the R.D.C. Mr. W. Farrow, Surveyor, 20, Park-place, Cardiff.

APRIL 7.—**Barton-upon-Irwell.**—ROADS.—Private street improvement works in Chapel-place, for the R.D.C. Mr. Geo. G. Forster, Council Offices, Green-lane, Patricroft, near Manchester.

APRIL 7.—**Manchester.**—ROADS.—Making up Clarence-street, Gorton; Glenolden-street, Clayton; and Partington-street, Newton Heath, for the T.C. Paving, &c., Department, District Surveyor's Office, Town Hall, Manchester. Deposit £1 1s.

APRIL 10.—**Hastings.**—ROADS.—Forming lawns and paths, and constructing roadway at the new East Sussex Hospital site, Cambridge-road. Mr. Percy H. Oxley, architect, 29, Havelock-road, Hastings.

APRIL 10.—**Hendon.**—ROADS.—Fully making up the following private roads within the district: St. George's-road, Templars-avenue (part of), Highcroft gardens, Leeside-crescent (part of), Temple-gardens (part of), and Woodville-gardens, for the Hendon U.D.C. Mr. A. O. Knight, Engineer and Surveyor to the Council, Town Hall, Hendon, N.W.4. Deposit £5.

APRIL 10.—**London.**—WATERWORKS.—For laying 9,400 yards of cast iron water main at Peckham Rye, for the Metropolitan Water Board. Mr. H. E. Stilgoe, Chief Engineer, Offices, New River Head, 173, Rosebery-Avenue, Clerkenwell, E.C.1. Deposit £20.

APRIL 11.—**Leeds.**—ROADS.—Reconstructing main roads on the Beckett-street Estate, for the Board of Guardians. Mr. James H. Ford, Clerk, Poor Law Offices, South-parade, Leeds.

APRIL 12.—**Birmingham.**—ROADS.—For the construction of roads, &c., on the Corporation Estate, Ward End, for the T.C. Mr. W. H. Humphries, Engineer, The Council House, Birmingham. Deposit £2.

APRIL 15.—**Larne.**—WATERWORKS.—For improving the water supply for the U.D.C. Mr. J. H. H. Swiney, Engineer, Avenue Chambers, Belfast. Charge £1 1s.

APRIL 18.—**Carlisle.**—SEWERS.—Sewering of portions of Harraby, Upperby, Blackwell and Belle Vue, for the T.C. Mr. Henry C. Marks, City Engineer, 36, Fisher-street, Carlisle. Deposit £3.

APRIL 19.—**Middleton.**—ROADS.—Draining and surfacing of a portion of the Market-place, Middleton, in (a) tarred macadam, (b) granolithic paving, for the T.C. Surveyor, Town Hall, Middleton.

APRIL 24.—**Alsager.**—BOREHOLE.—Deepening an existing borehole, for the U.D.C. Messrs. G. & F. W. Hodson, Consulting Engineers, Loughborough. Deposit £2 2s.

NO DATE.—**Chadderton.**—ROADS.—For the work necessary in connection with the abutments of bridges over the L. & N.W. Railway and Rochdale Canal, for the U.D.C. Messrs. James Diggle & Son, 14, Brown-street, Manchester. Deposit £5.

Competitions.

(*See Competition News, page* 470)

Auction Sales, Tenders, etc.

APRIL 4.—**Hendon, N.W.**—Messrs. Joseph Hibbard & Sons, in conjunction with Messrs. Powell & Powell, Ltd., will sell at the London Aerodrome, Church-lane, sixth portion surplus and plant, by order of Messrs. Grahame White Co., Ltd., motor accessories, building material, engineering plant, and stores. Auctioneers, Newington Green, Islington, London, N.16.

✱APRIL 4.—**Stockwell, London, S.W.**—Messrs. Veryard & Yates will sell, without reserve, at 255, Clapham-road, Stockwell, excellent timber, fittings, and building materials. Auctioneers, 365, Norwood-road, S.E.27.

✱APRIL 5.—**Bethnal Green, E.**—Mr. M. H. Morris will sell, by order of J. Shepherd & Co., without reserve, at 14A, Cudworth-street, Bethnal Green, E., builders' material, &c., including 50 tons cement, 15 cwt. Darracq tender in running order. Auctioneers, 23 and 25, Moorfields, E.C.2.

APRIL 5.—**Ilford, Essex.**—Messrs. Kemsley will sell, at the Corn Exchange, Romford, compact freehold building estate, area about 17¼ acres, together with the modern farmhouse and buildings known as White's Farm, and adjacent site of about 3 acres. Auctioneers, Broad-street House, E.C.2.

APRIL 5.—**London, E.C.**—Messrs. Stanley Parkes & Brown will sell at the London Auction Mart, 155, Queen Victoria-street, E.C., the freehold building estate, known as "Hill House," Palmers Green, N., together with property thereon, consisting of dwelling-house, with outbuildings, grounds about 4 acres. Auctioneers, Alderman's Hill, Palmers Green.

✱APRIL 5.—**London, S.W.**—Messrs. Douglas Young & Co. will sell, on the site at the juncture of Vassal and Brixton-roads, builders' and contractors' machinery and plant. Auctioneers, 51, Coleman-street, E.C.2 and 213, Clapham-road, S.W.9.

APRIL 6.—**Clapham Park, S.W.2.**—Messrs. Veryard & Yates, F.A.I., will sell, without reserve, by order of the Liquidator, building plant and materials, office furniture, etc., at 57, Rosebery-road. **Auctioneers**, 365, Norwood-road, S.E. 27.

✱APRIL 6.—**Clapham Park, S.W.2.**—Messrs. Veryard & Yates, F.A.I., will sell, by order of the Liquidator, at 57, Rosebery-road, modern freehold residence, 57, Rosebery-road; freehold yard and premises, long leasehold residence, No. 1, Rosebery-road. Auctioneers, 365, Norwood-road, S.E.27.

✱APRIL 11.—**Watlington, Oxon.**—Messrs. Joseph Hibbard & Sons will sell, by order of the Controller, Timber Disposal Department, at the Depot at Shotridge Woods (2 miles from Watlington Station and 9 miles from Wycombe), plant, stores, and standing beech timber. Auctioneers, 15, Newington Green, Islington, London, N. 16.

APRIL 19.—**Bournemouth.**—Messrs. Rawlence & Squarey will sell at Havergal Hall, Post Office-road, Bournemouth, freehold marine residential property, known as "Wentworth Lodge." Auctioneers, 3A, Dean's-yard, Westminster, S.W.1.

APRIL 19.—**Three Bridges, Sussex.**—Messrs. Knight, Frank & Rutley will sell by auction a freehold woodland building estate, known as Park Wood, Worth, area over 31 acres, at the "Fox Hotel," at 3 p.m. Auctioneers, 20, Hanover-square, W.1.

Public Appointment.

APRIL 4.—**Swansea.**—Temporary Quantity Surveying Assistant required by Swansea C.B. in the Borough Architect's Department. Mr. Ernest E. Morgan, A.R.I.B.A., Borough Architect, 3, Prospect-place, Swansea.

TRADE NEWS.

Mr. T. S. Farrar, formerly with Messrs. Brown & Tawse, Ltd., is now with the Barb Engineering Co., 5, Victoria-street, S.W. 1.

After 55 years at 108, Whitechapel-road, Messrs. George Jennings & Son, Ltd., have removed to Dudley Works, 42-4, Leman-street, Aldgate, E.1. This is the second time the firm has moved since the business was established 112 years ago.

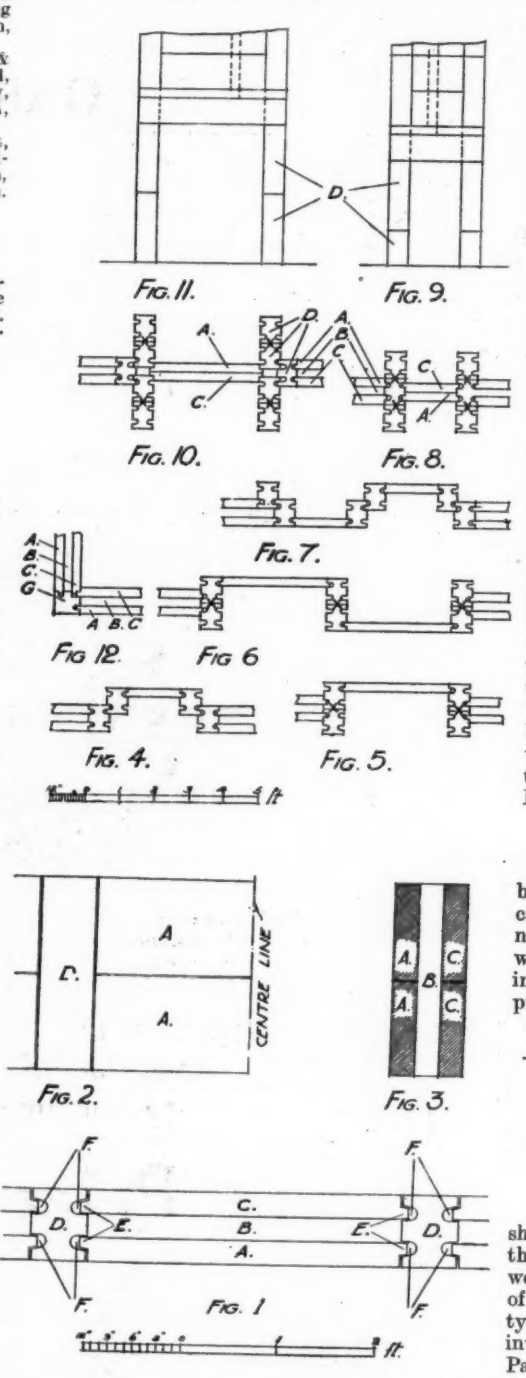
Messrs. Mayfair Services, Ltd., have removed from Nos. 9 and 10, Grantham-place, Park-lane, W., to larger premises at No. 1, Grantham-place. The telephone number remains as before, Mayfair 4430. On the occasion of the removal the firm entertained the staff to dinner.

A new hot-water fitting, "The Ejeculator," has been put on the market by Messrs. A. R. Watson & Co., of Bembridge, Isle of Wight. This apparatus is an arrangement of tubes, fitting one within the other, and is designed with the chief object of saving fuel. The special feature is that it circulates the hot water at the top part of the tank at a faster rate than that at the bottom, thereby increasing the difference in temperature between the top and bottom water. The fitting is easily fixed, being screwed to the return pipe inside the hot-water tank, and in the case of a cylinder where the return pipe does not extend through the flange an arrangement can be supplied so that the fixing can be accomplished without the necessity for taking out or altering the return pipe. The hot-water rising from the boiler is taken to within approximately 1½ in. of the top of the tank or cylinder, the return water going back to the boiler through the top of the "Ejeculator"; this circuit is by gravity in the usual way. As the water returns through the "Ejeculator" it induces a quantity of water to be drawn down or ejected from the inner and centre tube, and as this ejected water can only be replaced by water flowing up between the centre and outer tubes it follows that the whole of the water in the tank is in a continuous circuit, but the water at the bottom of the tank is retarded and much reduced in volume, hence the difference in temperature between the top and bottom water in the tank. With the "Ejeculator" in use the dampers can be practically closed to afford a small supply of hot water, thereby effecting a saving of fuel. The apparatus is automatic, and there are no valves, screws, or springs to rust or fur. It is claimed that it will also correct any badly-proportioned apparatus, and will simplify all secondary circuits as the return pipe can be brought back into the primary return wherever convenient. It can be used in either tank or cylinder, whether heated by kitchener boiler or independent boiler.

NEW INVENTIONS.

Concrete Wall Construction.

Among the patents sealed recently is an invention by Mr. Frank H. Heaven, A.R.I.B.A., P.A.S.I., of Aberkenfig, for "A System of Concrete Hollow Wall Construction" by means of pier blocks and slabs all tongued together and providing spaces for metal reinforcement where required in heavy classes of construction. The invention relates to the construction of hollow walls of the kind comprising block piers or posts grooved to receive and engage with rebated ends of inner and outer slabs, and strengthened where required by means of the insertion of metal reinforcement in vertical spaces formed by the ends of the inner and outer slabs and the back of the grooves in the block piers or posts. The grooves in the pier blocks are splayed and sunk with hollow or rounded backs or bottoms and are deeper than the nib on the vertical ends of the inner and outer slabs, and when these latter engage with the block piers or posts a vertical space is formed into which vertical metal rods may be placed as reinforcement. The vertical ends of the inner and outer slabs are splayed and rebated, forming nibs with square ends. Hollow walls and recesses for fireplaces or any other purpose are constructed with similar slabs and block piers.



New System of Concrete Wall Construction.

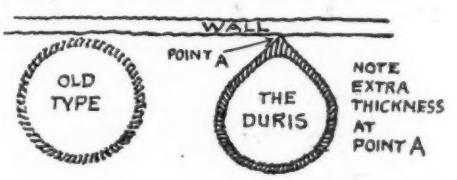
Suitable sizes for one man to handle and place into position with ease are suggested as follows:—"A"—The outer slab, 12 in. high and 3 ft. 3 in. long and 3 in. thick. "C"—The inner slab, 12 in. high and 3 ft. 3 in. long and 3 in. thick. "D"—The pier block, 24 in. high, 7 in. wide, and 9 in. thick. "G"—The angle pier block, 24 in. high, 9 in. wide, and 7¼ in. thick. The top and bottom edges of the inner and outer slabs "A" and "C" are square, and when placed in juxtaposition in the wall simply rest on one another, giving a solid support and providing a place for the insertion of the usual dampproof course required in such structures.

The horizontal joints between the inner and outer slabs and the horizontal joints between the pier blocks when placed into juxtaposition in the walls break line at a point half-way up the height of the pier blocks, giving a greater area of resistance to lateral bending or bulging in each unit of the wall. The angle pier blocks "G" are slightly different in shape from the main pier blocks, being rebated only on the inner edge to receive the ends of the inner slabs.

The system is shown in the illustration on this page. The hollow wall consists of the inner and outer slabs "A" and "C" respectively and a cavity "B," and the pier block "D," whilst at the angles the pier block "D" is substituted by the angle pier block "G." "E" are the rebated ends of the slabs, whilst "F" are the vertical spaces provided for metal reinforcements and are formed by the insertion of the nibs "E" into the grooves in the pier blocks "D" and "G." The same method of construction is employed in forming the recesses as for the wall construction, but with the addition of bond irons inserted in the horizontal joints between the pier blocks "D" in the positions where the blocks abut against each other with two plain faces or do not interlock, as shown in Figs. 5, 6, 8, and 10.

Rainwater Pipe.

The new pattern rainwater pipe illustrated below is designed to prevent what is a frequent cause of trouble with round rainwater pipes, namely, the rusting of the pipe at the back where (whilst the pipe is in position) it is impossible to cover it with paint or other protective covering. In pipes of the new shape all parts are accessible for painting, and the back, which in round pipes is generally the weakest part, becomes the strongest by reason of its extra thickness. It is claimed that this type of pipe costs no more than the old. The invention has been patented by the Duris Patent Rainwater Pipe Co., of Halifax.



Staff Dinner.

At the staff dinner of the Limmer & Trinidad Lake Asphalt Co., Ltd., at Frascati's Restaurant on the 23rd inst., observance of the Company's jubilee and the completion of Sir Henry Holloway's twenty-first year as Chairman made the occasion a memorable one. With ninety members of the staff present, Sir Courtauld Thompson (for the Directors) and Mr. Bodger (representing the staff) presented Sir Henry Holloway with an antique inkstand and a silver coffee service as tokens of esteem. Wireless messages of congratulation from America were received. In the directors' speeches a tribute was paid to the *esprit de corps* prevailing throughout the Company's many branches.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.

Best Stocks 4 13 0

Per 1000, Delivered at London Goods Stations.

Flettons, at	£ s. d.		£ s. d.
King's Cross	3 5 0	Best Blue Pressed Staffs.	10 11 6
Do. grooved for plaster	3 7 0	Do. Bullnose	11 1 6
Do. Bullnose	4 0 0	Blue Wire Cuts	8 11 6

Best Stourbridge Fire bricks:—

2½ in.	11 3 0	3 in.	13 2 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers	24 0 0	D'ble Str'tch'rs	32 10 0
		D'ble Headers	29 10 0
		One Side and two Ends	33 10 0
Headers	23 10 0	Two Sides and one End	34 10 0
Quoins, Bullnose and 4½in. Splays and Flats	30 10 0	Squints	32 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.		
Thames Ballast	14 0	per yard,	delivered 2 miles radius Paddington:
Pit Sand	17 0	„ „	
Thames Sand	19 0	„ „	
Best Washed Sand	19 0	„ „	
½in. Shingle for Ferro-Concrete	19 0	„ „	
¼ in. „ „	20 0	„ „	

Per ton delivered in London area in full van loads.

	£ s. d.		£ s. d.
Best Portland Cement. British Standard Specification Test	3 10 6	..	3 16 0

63/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above 10 0

NOTE.—The sacks are charged at 1s. 9d. each and credited at 1s. 6d. each if returned in good condition within three months. carriage paid.

Best Ground Blue Lias Lime 2 8 0 at rly. depot.

Grey Stone Lime 61s. 0d. per ton delivered in City and Central districts.

Stourbridge Fireclay in s'cks 37s. 8d. per ton at rly. dpt.

STONE.

BATH STONE—delivered in railway trucks at	s. d.
Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R.. per ft. cube	3 2½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R.. per ft. cube	3 5½
Do. do. delivered on road wagons at Nine Elms Depot	3 6½

PORTLAND STONE—

Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 11½
Do. do. delivered on road wagons at above stations, per ft. cube	5 0½

White basebed, 3d. per ft. cube extra.

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

YORK STONE, BLUE—*Robin Hood Quality.*	s. d.
Delivered at any Goods Station London.	
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per Ft. Super	6 1½
6 in. rubbed two sides, ditto „	6 7½
3 in. sawn two sides slabs (random sizes) „	2 7
2 in. to 2½ in. sawn one side slabs (random sizes) „	1 8
1½ in. to 2 in. ditto, ditto „	1 5

HARD YORK—

Delivered at any Goods Station London.	
Scappled random blocks Per Ft. Cube	7 6
6 in. sawn two sides landing to sizes (under 40ft. super.) Per Ft. Super	6 6
6 in. rubbed two sides ditto „	7 2
4 in. sawn two sides slabs (random sizes) „	3 4
3 in. ditto. ditto „	2 10
2 in. self-faced random flags .. Per Yard Super	9 9

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	36 0	per standard
4 × 9	35 0	„
4 × 8	30 0	„
4 × 7	30 0	„
3 × 8	30 0	„
3 × 7	25 0	„
2½ × 7	25 0	„
3 × 6	25 0	„
3 × 11	34 0	„
2 × 11	32 0	„
3 × 9	30 0	„
2½ × 9	30 0	„
3 × 4½	20 10	„
3 × 4	20 10	„

PLANED BOARDS.

1 × 11	42 10	„
1 × 9	37 10	„

PLAIN EDGE FLOORING.

Inches		
¾	20/-	per square
¾	22/6	„
1	25/-	„
1¼	32/6	„
1½	44/-	„

TONGUED AND GROOVED FLOORING.

Inches		
1	25/-	per square
1¼	32/6	„
1½	44/-	„

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
¾	17/6	per square
¼	22/6	„
1	25/-	„

Inches	BATTENS.	s. d.	
¾ × 2		3 0	per 100 ft.

SAWN LATHS.

Per bundle	0 4 0

Dry Wainscot Oak, per ft. super, as inch	0 2 6	to	0 3 0		
¼ in. do. do.	0 1 10½	to	0 2 6		
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0 2 3	to	0 3 0		
Cuba Mahogany	0 3 6	to	0 4 0		
Teak (Rangoon, Moulmein or Java), per load	52 10 0	to	55 0 0		
American Whitewood planks, per ft. cube	0 16 0	to	0 18 0		
Best Scotch Glue, per cwt.	7 2 0	to	—		
Liquid Glue, per cwt.	4 18 0	to	6 0 0		

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	46 10 0
„ „ „	22 by 12	42 5 0
First quality „	22 by 11	39 0 0
„ „	20 by 12	37 2 6
Best Blue Portmadoc	20 by 10	31 15 0
„ „	18 by 10	26 5 0
First quality „	18 by 9	23 2 6
„ „	16 by 10	22 0 0
„ „	16 by 8	17 2 6

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	7 0 0
Ditto hand-made ditto	7 15 0
Ornamental ditto	8 0 0
Hip and valley tiles (per dozen)	0 12 0

METALS.

JOISTS, GIRDERS, &C., TO LONDON STATION PER TON—	£ s. d.
R. S. Joists, cut and fitted	14 10 0
Plain Compound Girders	16 10 0
„ Stanchions	18 0 0
In Roof Work	22 0 0

WROUGHT IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £15 net value delivered direct from Works. 5 per cent. less above gross discounts, carriage forward if sent from London Stocks.)

Tubes. (all sizes).	Fittings. Up to 2″.	Fittings. Over 2″.	Flanges. Up to 2″.	Flanges. Over 2″
Gas	47½ %	50 %	60 %	65 %
Water	41½ %	45 %	55 %	60 %
Steam	35 %	40 %	50 %	55 %
Galv'd—				
Gas	32½ %	42½ %	52½ %	57½ %
Water	25 %	37½ %	47½ %	52½ %
Steam	17½ %	32½ %	42½ %	47½ %

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts plain	3 10½	3 4	4 0
2½ in. „	4 8	3 8	5 0
3 in. „	5 6½	4 0	6 0
3½ in. „	6 1	5 0	7 0
4 in. „	6 10½	5 8	8 0

RAIN-WATER PIPES, &C.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	2 6½	2 0	2 8
2½ in. „ „	2 9½	2 4	3 2½
3 in. „ „	3 4½	2 10	4 3
3½ in. „ „	4 0	3 4	5 0
4 in. „ „	4 6	4 1½	6 1

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices per yd.: 4 in., 5/9. .. 5 in., 7/2. .. 6 in., 8/9.

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Common Bars	13 10 0	to	14 10 0
Staffordshire Crown Bars - good merchant quality	14 10 0	..	15 10 0
Staffordshire "Marked Bars"	17 10 0	..	18 10 0
Mild Steel Bars	12 10 0	..	13 10 0
Steel Bars. Ferro-Concrete quality, basis price ..	12 10 0	..	13 10 0
Hoop Iron, basis price ..	17 0 0	..	18 0 0
„ „ Galvanised ..	31 0 0	..	33 0 0
Soft Steel Sheets, Black—			
Ordinary sizes to 20 g.	15 0 0	..	16 0 0
„ „ „ 24 g.	16 0 0	..	17 0 0
„ „ „ 26 g.	17 10 0	..	19 10 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality—			
Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	21 0 0	..	22 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.	22 0 0	..	23 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g.	24 0 0	..	26 0 0
Flat and Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 9ft. 20 g.	21 10 0	..	22 10 0
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	22 0 0	..	23 0 0
Ordinary sizes, 6ft. to 9ft. 26 g.	24 0 0	..	25 0 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Sheets Galvanised Flat, Best quality—			
Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	27 0 0	..	28 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	28 0 0	..	29 0 0
Best Soft Steel Sheets, 26 g.	30 0 0	..	31 0 0
Cut Nails, 3in. to 6in. (under 3in. usual trade extras.)	24 10 0	..	25 10 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/7 to 1/10 per foot super.

LEAD, &c.

	Delivered in London. £ s. d.		
LEAD—Sheet, English, 4 lb. and up	33 0 0	..	—
Pipe in coils	33 10 0	..	—
Soil Pipe	36 0 0	..	—
Compo pipe	37 0 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	19 0 0	..	—
Do., ex country, carriage forward per ton	20 0 0	..	—
COPPER—			
Strong Sheet per lb.	0 2 3	..	—
Thin „ „	0 2 4	..	—
Copper nails „	0 2 3	..	—
Copper wire „	0 2 4	..	—
TIN—English Ingots „	0 1 9	..	—
SOLDER—Plumbers' „	0 0 10	..	—
Tinmen's „	0 1 0	..	—
Blowpipe „	0 1 3	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft.		Per Ft.	
15 oz. fourths	4½d.	32 oz. fourths	9½d.
„ thirds	5½d.	„ thirds	11d.
21 „ fourths	6½d.	Obscured Sheet, 15 oz.	7d.
„ thirds	6½d.	21 „	9d.
26 „ fourths	7½d.	Fluted and Enamelled 15 „	11d
„ thirds	8½d.	Fluted and Enamelled 21 „	1/2

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES. Per Ft.

¼ Rolled plate	4½d.
⅜ Rough rolled	6d.
½ Rough rolled	6½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	7d
Ditto, tinted	9½d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes per gallon		0 3 10
„ „ „ in barrels „		0 3 11
„ „ „ in drums „		0 4 0
Boiled „ „ in barrels „		0 4 3
„ „ in drums „		0 4 5
Turpentine in barrels „		0 6 1
„ in drums (10 gall.) „		0 6 4
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		54 5 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered		76 0 0
Red Lead, Dry (packages extra) ..	per ton	37 0 0
Best Linseed Oil Putty	per cwt.	0 17 0
Filocol	per cwt.	0 15 6
Size. X D Quality	fkn.	0 4 6

VARNISHES, &c.

	Per gallon. £ s. d.	
Oak Varnish	Outside	0 15 0
Fine ditto	ditto	0 17 2
Fine Copal	ditto	1 1 6
Pale Copal	ditto	1 2 6
Pale Copal Carriage	ditto	1 4 6
Best ditto	ditto	1 14 6
Floor Varnish	Inside	0 19 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal flatting	ditto	1 0 6
Hard drying Oak	ditto	0 18 0
Fine Hard drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 6
Pale ditto	ditto	1 2 6
Best ditto	ditto	1 14 6
Best Japan Gold Size		0 12 6
Best Black Japan		0 18 0
Oak and Mahogany Stain (water)		0 17 6
Brunswick Black		0 11 0
Berlin Black		0 16 6
Knotting (patent)		1 16 0
French and Brush Polish		1 8 0
Liquid Dryers in Terebine		0 13 6
Culrass Black Enamel		0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	15	6
Add if in clay	„ „	1	9
Add for every additional depth of 6 ft.	„ „	1	3
Planking and strutting to trenches	per foot super	0	7
Do. to sides of excavation, including shoring	„ „	1	2

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6 ..	per yard cube	43	0
Add if in underpinning in short lengths	„ „	9	6
Add if in floors 6 in. thick	„ „	3	10
Add if in beams	„ „	4	9
Add if aggregate 1 : 2: 4	„ „	12	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	„ „	4	0

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	39	15	0
Add if in stocks	„	8	10	0
Add if in Staffordshire blues	„	25	10	0
Add if in Portland cement and sand	„	3	10	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat strucks or weathered joint.....	„ „	0	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	„ „	0	0	11½
Axed in stocks	„ „	0	1	11
Rubbed and gauged jointed in putty camber or segmental	„ „	0	6	8

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	„ „	0	1	5
Setting ordinary register grates and stoves	each	1	1	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	„	5	5	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	7	6
Three-quarter-inch vertical damp course	„ „	11	8
¾ inch on flats in two thicknesses.....	„ „	8	6
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	„ „	1	4

MASON.

		s.	d.
York stone templates fixed	per foot cube	16	3
York stone sills fixed	„ „	28	6
Bath stone and all labour fixed	„ „	15	0
Portland stone fixed	„ „	23	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails....	per square	98	0
Do. 20 in. × 10 in. Do. Do.	„	115	0
Do. 24 in. × 12 in. Do. Do.	„	117	6

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates .....per foot cube		6	9
Do. joists	„ „	7	9
Do. roofs, floors and partitions	„ „	7	9
Do. trusses	„ „	10	0

		¾″	1″	1¼″	2″
Deal rough close boarding	per sq.	42/–	48/–	56/–	85/–

		s.	d.
Flat centering for concrete floor, including struts or hangers .. „		63	0
Do. to beams .....per ft. sup.....		1	6
Centres for arches	„	2	0
Gutter boards and bearers	„	1	6

FLOORING.		¾″	1″	1¼″	1½″
Deal-edges shot	per sq.		49/–	58/–	67/–
Do. tongued and grooved	„		54/–	65/–	72/–
Do. matchings	„	45/–	55/–		
Moulded skirting, including backings and grounds .....per ft. sup.		1/8	2/1	2/3	2/9

SASHES AND FRAMES.		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	11
Two Do. Do. Do.	„ „	2	4½
Add for fitting and fixing	„ „	0	6
Deal-cased frames with 1 in. inner and outer linings, 1¼ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights ; average size.....	„ „	4	9

DOORS.		1½″	1¾″	2″
Two-panel square framed .....per ft. sup.		2/6	2/9	2/11
Four-panel Do.	„	2/10	3/2	3/5
Two-panel moulded both sides	„	3/2	3/5	3/8
Four-panel Do. Do.	„	3/6	3/9	4/–

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	15	6

		1″	1¼″	1½″
Plain deal jamb linings framed	per ft. sup.	1/11	2/–	2/3
Deal shelves and bearers	„	1/8	1/10	2/1
Add if cross tongued	„	2d.	2d.	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	2/3	2/6	2/11	—	—
Deal strings wrot on both sides and framed	1/9	2/1	2/3	2/9	—

		s.	d.
Housings for steps and risers	each	0	11½
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail ; average 3 in. × 3 in.	„ „	6	0
Add if ramped	„ „	11	10
Add if wreathed	„ „	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4½
Sash fasteners 1	1½d.	Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/–
Casement stays.....	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	19	0
Plain compound girders	„	22	0
Do. stanchions	„	25	0
In roof work	„	30	0

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints ..	ft. run	1/11	2/4½	3/7	4/–
Ogee Do. Do. ..	„	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	„	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	„	1/11	2/4½	3/7	4/–
Do. nozzles for inlets	„	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	56	0
Do. Do. in flats	„	52	0
Extra labour and solder in coated cesspools	each	7	4
Welt joint	per ft. run.	0	6
Soldered seam	„ „	1	10
Copper nailing	„ „	0	7

		½″	¾″	1″	1½″	2″	4″
Drawn lead waste	per ft. run	10d.	1/6	1/9	3/1	3/10	
Do. service	„	1/5	1/11	2/3	3/6		
Do. soil	„						6/2
Bends in lead pipe	each					3/3	8/2
Soldered stop ends	„	1/2	1/8	2/1	2/10	3/6	
Red lead joints	„	11d.	1/–	1/3	1/11	2/4	4/10
Wiped soldered joints	„	2/10	3/6	4/–	4/11	6/6	9/9
Lead traps and cleaning screws	„				14/7	19/6	
Bib cocks and joints ..	„	6/4	9/7	15/4	41/–		
Stop cocks and joints	„	15/4	17/2	25/8	64/–		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	3	2
Do. Do. Sirapite	„ „	3	7
Do. Do. Keen's	„ „	4	9
Add sawn lathing	„ „	1	9
Add metal lathing	„ „	3	0
Portland cement screed	„ „	2	9
Do. plain face	„ „	4	6
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	7

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	1
26 oz. Do.	„ „	1	4
Obscured sheet	„ „	1	8
⅛ in. rolled plate	„ „	1	0
¼ in. rough rolled or cast plate	„ „	1	1
¼ in. wired cast plate	„ „	1	7

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	3
Knotting and priming	„ „		8
Plain painting 1 coat	„ „	1	0
Do. 2 coats	„ „	1	9
Do. 3 coats	„ „	2	6
Do. 4 coats	„ „	3	3
Graining	„ „	2	8
Varnishing twice	„ „	2	0
Sizing	„ „	0	4
Flatting	„ „	0	8
Enamel	„ „	1	6
Wax polishing	per foot sup.	0	10½
French polishing	„ „	1	3
Preparing for and hanging paper	per piece 2/– to 4/–		

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PROPOSED NEW BUILDINGS & OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERDEEN.—Plans approved: Two dwelling-houses, Hamilton-place, for Mr. John Cooper, builder, per Messrs. Wilson & Walker, architects; alterations, 339, Union-street, for Rudge-Whitworth, Ltd., per Mr. John G. Marr, architect; alterations, 121, Union-street, for the Home and Colonial Stores, Ltd., per Messrs. Kelly & Nicol, architects; alterations, 607, King-street, for Mr. William G. Edwards, granite merchant, per Mr. G. W. Cobban, architect; garage, Balnagask-road, for Mr. Wm. Robertson, fish merchant; garage, 33, Mile-End-avenue, for Mr. James Shaw, tailor, per Messrs. D. & J. R. M'Millan, architects; additions to garage, for John Ledlingham & Son, Ltd., per Messrs. Brown & Watt, architects; car shed and store, Carlton-place, for Mr. Wm. Pratt, per Mr. Wm. E. Gauld, architect; shed, Osborne-place, for Mr. William Harper, commercial traveller; buildings, Mansekeld-road and Abbey-place, for the Anglo-American Oil Co., Ltd., per Mr. George Ross, manager, Aberdeen branch.

AMBLE.—Plans passed by U.D.C.: Additions to premises, Queen-street, for Messrs. R. Carse & Son, for Mr. J. Hogg.

AMERSHAM.—Plans passed by R.D.C.:—Bungalow, Parkfield-avenue; shop, Sycamore-road; two cottages, Gold Hill; house, Parkfield-avenue; bungalow, White Lion-road.

BANGOR (CO. DOWN).—Plans for a new Baptist Church and schools on the east side of Hamilton-road, have been passed by the U.D.C.

BLACKWELL.—Enlarging their hall, institute and club, laying-out of bowling-greens, tennis courts, making a football ground, and a recreation ground for children, and erecting pavilions with dressing-rooms, at a cost of £3,000, constitute a scheme which a committee of Blackwell miners has been appointed to consider. The money is their quota from the Miners' Welfare Fund, and the scheme emanates from Mr. J. T. Todd, general manager of the Blackwell Colliery Company.

BRADFORD.—The T.C. has received permission from the Ministry of Health to erect 50 additional houses.

BROADFORD (CO. LIMERICK).—It is proposed to erect a curate's residence for the Rev. Tomas de Bliall, C.C., in accordance with plans, etc., prepared by Mr. James D. Leahy, architect, of Cullinagh House, Newcastle West.

CARSHALTON.—Plans passed by the U.D.C.:—Seven houses, Ashcombe-road, for Messrs. Turnbull & Sons; two houses, Rotherfield-road, for Mr. K. Scott.

CHIPPING NORTON.—Plans passed:—Alterations, "Brewers' Arms," Albion-street, for Messrs. Hitchmans & Co.

CROYDON.—The Metropolitan Water Board has passed an estimate of £5,950 for the alteration and renewal of the southern district main in Green-lane.

DARLINGTON.—The proposal of the Corporation to borrow £30,000 for purposes of sewage disposal has been the subject of an inquiry by Mr. P. M. Crossthwaite.

EDINBURGH.—Warrant has been granted at the Dean of Guild Court to the Corporation of the city for the erection of 22 blocks of dwelling-houses at Longstone. The scheme was originally promoted by Midlothian County Council, but was taken over by the city after amalgamation.

FOLKESTONE.—The Corporation has adopted a scheme for the extension of the outfall sewer to Copt Point and across Copt Rocks at an estimated cost of £46,000, and an application will be made to the Ministry of Health for sanction to borrow the money. The engineers are Messrs. W. H. Radford & Son, of Nottingham.

GELLYGAER.—The Ministry of Health has consented to the U.D.C. erecting 40 houses at Bargoed.

HASTINGS.—Plans passed by T.C.: Bungalow Moscow-road, Mr. J. Kenward, owner, Mr. A. Dray architect; additions at "Keena House," Lower Park-road, Mr. H. Baird, owner, Bruce & Co., architects; bungalow at Bexhill-road, Mr. W. Pulman, owner, Mr. W. Pulman, architect; garage, Clegg-street, Mr. F. W. Bones, owner; alterations, 29 and 30, Havelock-road, F. Ray & Sons, owners, Mr. D. Wood, architect; alterations, 23 and 25, Canute-road, Mr. G. Holman, owner, Callow & Callow, architects; conversion into garage of 13, Havelock-road, Mr. J. Hollingsworth, owner, Mr. H. M. Jeffrey, architect; and a garage, rear of Elphinstone-road, Mr. D. E. L. G. Whittuck, owner.

HESTON AND ISLEWORTH.—Plans passed by the U.D.C.: Messrs. Danels & Son, Ltd., for additions to 246, Staines-road, Hounslow; Messrs. P. Chase Gardener & Co., lavatories, Inverness-road, Hounslow; Messrs. Thomas Hiscock, Ltd., extension to offices, Isleworth Brewery, Isleworth; Messrs. Danels & Son, Ltd., alterations to 220a, High-street, Hounslow; Mr. Thomas Turland, house, Tiverton-road, Hounslow; Messrs. L. L. Leeder & Co., four lock-up shops, Thornbury-road, Spring Grove.

HORSHAM.—The Governors of the Cottage Hospital have decided to proceed with the erection of a new building. Plans have been prepared by Mr. F. G. Troup, F.R.I.B.A., who estimates that the building will cost £13,000, and towards this sum about £12,000 has been raised.

KEIGHLEY.—Work will shortly be started in connection with the erection of new headquarters for the Salvation Army in Keighly, and it is hoped that it will be possible to lay the foundation stones for a new "citadel" in Cooke-lane on May 6.

LIVERPOOL.—Plans have been passed by the licensing magistrates for a picturedrome in Prescot-road, estimated to cost £45,000.

LLANGOLLEN.—It is proposed enlarge the hospital, at an estimated expenditure of £1,200.

LONDON (WANDSWORTH).—Plans passed by B.C.: Mr. H. Curtis, warehouse, Rectory-grove, Clapham North; Messrs. Yeoman, Spriggs & Co., garages, 10, Shrubbery-road, Streatham; Messrs. J. Mowlem & Co., Ltd., surface-water drains at premises of the British Petroleum Co., Ltd., Osiers Estate, Point Pleasant, Southfield; The Guild of Builders (London), Ltd., additions at Holmwood, Crescent-grove, Clapham South; Mr. L. Barrett, factory, 51 and 53, Bickersteth-road, Tooting; Messrs. Simmonds Bros & Sons, Ltd., redrainage of Woodhouse, Beaumont-road, Southfield; Messrs. T. H. Adamson & Sons, (i) lavatories, &c., at White Lion Hotel, High-street, Putney; (ii) redrainage of 111-115, High-street, Putney; by Girls' Public Day School Trust, Ltd., lavatory accommodation, 35, Putney Hill; Messrs. Taplin & Clayfield, redrainage, 27, Nicosia-road, Springfield; Messrs. Simmons Bros., redrainage of the "Green Man" publichouse, Putney Heath; Mr. H. F. Buchan, eight houses, Telford-avenue, Streatham; Mr. A. Dawkins, 44 houses, Collamore-avenue, Lyminge Gardens and Marham Gardens, Springfield; Mr. W. J. Phillips, redrainage of Premier-place, High-street, Putney; Mr. T. G. Matthews, redrainage, 38, Telford-avenue, Streatham; Messrs. J. Chubb & Co., additions to drains, 181, Brixton hill, Streatham; Mr. F. Jones, alterations and additions, "The Hop Pole" public house, 64, Putney Bridge-road, Southfield; Messrs. Swain & Selley, three shops on land adjoining "Rose and Crown" publichouse, Tooting Bec-road, Tooting; Messrs. J. S. Daniels & Son, garages, 253, Streatham High-road; Mr. H. C. Bowman, factory, 298, Streatham High-road; Messrs. F. T. Wooding & Sons, two houses, Abbotsleigh-road, Streatham; Messrs. E. & A. Wates, three houses, Fontaine-road, Streatham; Mr. J. Long, redrainage of Red House, West Hill, Southfield; Messrs. Truett & Steel, Ltd., lock-up garages, 321, Streatham High-road; Messrs. J. Caulter & Sons, redrainage, 1, Picketts-street and 27, Oldridge-road, Balham; Mr. T. H. James, redrainage, 135, King's-avenue, Clapham South.

LONDON (STREATHAM).—Block of lock-up garages, etc., 181, Brixton Hill, Mr. R. T. Grove for the Cedric Garages, Ltd.; additions, 564, Streatham High-road, Messrs. H. Smith & Son, on behalf of Mr. W. Bennett.

LONDON (HAMMERSMITH).—Drainage plans passed by B.C.:—At 14, Askew-crescent, for Mr. A. Perton; at 29, Hythe-road, for Messrs. Norton & Gregory; at 13, Redmore-road, for Mr. W. Davies; at 11, Findon-road, for Mr. F. C. Mander; at 2, Frithville-gardens, for the Borough Council; at 185, Hammersmith-road, for Mr. Chas. May; at "The Hermitage," Ravenscourt Park, for Mr. James Chamberlen; at 32, Stronsa-road, for Mr. J. E. Connell; at "The Priory," Lower Mall, for Messrs. J. Simpson & Son; at 23, Perrers-road, for Mr. E. C. Marshall.

LONDON (LAMBETH).—Plans passed by B.C.:—Building, Tinworth-street, Vauxhall, for Mr. P. A. Hamilton.

LONDON (STOKE NEWINGTON).—Plans passed by B.C.:—Drainage of five houses, Green-lanes, for Mr. T. Pryor.

LONDON.—Plans have been approved by the L.C.C. for the extension of a garage for Mr. E. Thornicroft, Commercial-street, E. The surveyor is Mr. A. E. Shaw, 65, Victoria-street, S.W. 1.

MARGATE.—Plans passed by T.C.:—Alterations, 32, Eaton-road, F. Padget; bungalow, Westonville-avenue, W. R. H. Gardner; alterations, Bellevue House, Canterbury-road (amended plan), Reeve & Reeve; alterations and new w.c., Cambridge House, Sweyn-road, C. A. Edmonds; additions, "Glenwood," Edgar-road, W. R. H. Gardner; new w.c., International Tea Stores, High-street, F. J. Doughty; new w.c., Hoy Hotel, Reeve & Reeve; alterations, 185, Northdown-road, L. Snowden; house, corner of Lower Northdown-road and Lalehal-road, Wood & Co.; addition to bakehouse, 24, Charlotte-square, Billinghurst and Webb; garage, Princes-gardens, S. Crofts; garage, 106, Canterbury-road, Wiles Bros.; sanitary improvements, Lawn House, Grosvenor-place, W. & A. Admans; alterations and addition, 17, Marine-terrace, W. Funnell.

NUNEATON.—Plans passed by R.D.C.:—Thirteen houses at Arley, for the Arley Colliery Co.

RIPON.—Plans passed by T.C. Bungalow, Littlebrook-lane, for Mr. F. W. Hargrave.

RYDE.—Plans passed by T.C.: External staircases at Spencer Lodge, Market-street, and at Percy Lodge, the Strand, for Mrs. E. M. Crane; covering-in of stable yard at East-street, for Mr. E. Ward; bungalow in Partlands-avenue for Mr. A. W. Hill; dwelling-house in Ratcliffe-avenue, for Mr. H. F. Dallimore.

SKIPTON.—The Skipton Division of the St. John Ambulance Association has decided to accept a generous offer of a building site on the old Grammar School estate for the purpose of the erection of new headquarters.

SKEGNESS.—Mr. R. C. Cox, Ministry of Health inspector has conducted an inquiry into the application of the T.C. for sanction to borrow £3,475 for the provision of additional public conveniences, £1,250 for development of the Pleasure and Marine Gardens, and £750 for the construction of sewers.

STOCKTON-ON-TEES.—Plans passed by T.C.: Additions to the X-ray room at the hospital, a bungalow at Grange-avenue (Mr. H. H. Domlin), steel-framed building Bowesfield Steelworks, alterations to premises 112, High-street (Mr. S. Lamplugh), alteration to premises 134, High-street (Mr. J. Dodds).

SWANSEA.—Plans passed by T.C.:—Two houses, Knoll-avenue, for Mr. Lewis Davies; additions and alterations, "Commercial Inn," Gower-road, Killay, for Mr. Perkins; bungalow, Boarspit-lane, West Cross, for Mr. Bart. Beer; stable, &c., Swansea-road, Dunvant, for Mr. Wm. Davies; workshop, Eversley-road, Sketty, for Mr. William Rott; house, Gower-road, Sketty, for Mr. A. V. Rees; bakehouse. Halls Stores, Goltre Fawr-road, Dunvant, for Mr. D. R. Griffiths; alterations, Empire Theatre, Oxford-street, for Messrs. Moss, Ltd.; additions, Clayton House, Clayton-street, Brynhyfryd, for Mr. George Jones; two houses and shops, Carmarthen-road, Gendros, for Mr. D. Davies; house, Newton-road, Mumbles, for Mr. E. R. B. French; additions to workshop, Upper Strand, for Messrs. The Calways Concrete Walling, Ltd.; warehouse, Rutland-street and Wassall-place, for the Decorators Supply Co., Ltd.; additions, 116, High-street, for Mr. Page; private drain near Hadland-terrace, West Cross, for Mr. A. Beer; house, Kings-road, Mumbles, for Mr. B. F. Hoppe.

SWANSEA.—Sir Alfred Mond has announced that, under the Government unemployment scheme, the building of a dry dock would shortly begin at Swansea.

TENTERDEN.—Plans passed by R.D.C.: Alterations and additions to "The Firs," Appledore.

THORNABY-ON-TEES.—Plans passed:—Extension to works, for the Tees Bottling Co.

TILBURY.—A Select Committee of the House of Commons has passed a Bill promoted jointly by the Port of London Authority and the Midand Railway Company to authorise the Authority to construct a floating landing stage and other works at Tilbury and for vesting a part of the stage in the Midland Railway Company, and also to authorise the Railway Company to construct an extension of the stage.

TYNEMOUTH.—Plans passed by T.C.: Alterations "Marquis of Lorne" P.H., Pearson-terrace, for Messrs. J. W. Cameron & Co., Ltd.; shelter for Tubercular Patients, Tynemouth Union, Preston-road, by Mr. Stockdale, for Tynemouth Guardians; bay window, 5, Windsor-gardens, for Mr. W. Stockdale; additions, 19 and 20, Laet-street, by Mr. W. Stockdale, for Mrs. H. E. Reay; drill hall, Percy Main, by Mr. J. Appleton, for St. John Ambulance Brigade; rebuilding of "Crescent Tavern," Hudson-street, by Messrs. F. R. N. Haswell & Son, for Messrs. W. B. Reid & Sons, Ltd.; alterations, King-street, by Messrs. Hope & Tasker, for Mr. H. D. Burton; alterations, 1, Stanwick-street, Tynemouth, by Mr. C. E. Craig, for Mr. E. Harker.

WAKEFIELD.—Plans passed by T.C.: Mr. S. Raines, alterations to house, Pinfold-lane; Mr. W. T. Turner, additions to garage, Calder Vale-road, for Messrs. E. Green & Son, Ltd.; Messrs. Newbald & Hartley, garage, Denby Dale-road, for Messrs. Patons & Baldwins, Ltd.; Mr. W. T. Turner, cycle sheds to Phœnix Works, Calder Vale-road, for Messrs. E. Green & Son, Ltd.; Mr. J. M. Taylor, garage, Shuttleworth's-yard, for Messrs. W. & S. S. Hemingway; Messrs. Bell & Kay, two houses, Carr-lane, for Messrs. Nicholson & Briggs; Mr. H. Dobson, warehouse to house and shop, Agbrigg-road and Oakenshaw-street, for Mr. S. Gill; Mr. W. Hartley, garage, Stafford-square, for Messrs. Kilkenny Bros.; Mr. W. H. Ogden, cinema theatre, Teall-street and Saville-street, for Mr. J. Penrice; Messrs. Massie & Holdsworth, house, Manygates-lane, for Mr. J. P. Cocker; Mr. J. H. Pitt, drainage to the "Great Bull" Hotel, Market-street, for the Prudential Insurance Co., Ltd.; Mr. W. Wrigley, bakehouse Commercial-street, for Mr. H. Dent.

WEETSLADE.—At the last meeting of the U.D.C. plans were passed for 12 semi-detached bungalows at Coach-lane.

WEST HAM.—Plans passed by B.C.:—Sub-station, Victoria Dock-road, Custom House, for the Electricity Department; alterations, 361 and 363, Queen's-road, Upton Park, per Mr. R. C. Turner Gordon; messroom at Messrs. Blackwell's premises, Sugar House-lane, per C. Yates & Co.; alterations, "Princess Alice" publichouse, Forest Gate, per Mr. A. Smith; boiler-house, Old School premises, High-street, Stratford, per Mr. L. Webb; lavatory accommodation, Railway Arch, 371, Station-road, Forest Gate, per Mr. C. H. Richardson, and at the Premier Bitumen Asphalte Co.'s Works, Short-street, Stratford, per Mr. A. Smith.

WILLESDEN.—Plans passed by the U.D.C.: addition, "Hazeldene," Kingthorpe-road, Stonebridge, for Mr. Walter Thomas; eight dwelling houses, 22-36, Dollis Hill-avenue, Cricklewood, for Mr. F. W. Brealy; addition, 142, Olive-road, Cricklewood, by and for Mr. F. Cameron; dwelling house with garage, "Stonecot," Chatsworth-road, Cricklewood, for Mr. C. W. B. Simmonds; four dwelling houses, with garages to each 85, 87, 89 and 91, Chatsworth-road, and one house, "Aberfeldie," Deerhurst-road, Cricklewood, for Mr. C. W. B. Simmonds; alterations, 8, Dollis Hill-avenue, Cricklewood, by Mr. J. L. Tyssen Ebbs, for the Owen Owen Estate, Ltd.; motor garage, "Penhurst," 113, Chatsworth-road, Cricklewood, for Mr. Jeffrey Phillips.

WOKINGHAM.—Plans passed by R.D.C.: Wokingham Without: alteration and additions to Randall's farmhouse, for Mr. C. E. Gillett; workshop at 1, Azalea Cottages, London-road, for Mr. H. E. Northcott, Winnersh: house, Reading-road, near Sindlesham Halt, for Mr. H. E. Simmons, Finchampstead: outbuildings and garage, at Puck's Wood, for Mr. E. D. Mansfield; Swallowfield: bungalow cottage at

* See also our List of Contracts, Competitions, etc.

Farley Hill, for Mr. A. Barker; Wokingham Without: bunga ow. Wellington College-road, near The Throat, for Mr. Sharp, Wargrave: bungalow, near station, for Mr. Catling; Winnersh: lock-up shop and living room, near Sindlesham, for Mr. W. Wilson.

WORKSOP.—Plans have been approved by the U.D.C. for the building of a new bank in Bridge-street, Worksop, by the Yorkshire Penny Bank, and a site has been secured on which it is intended to erect an up-to-date building for the London Joint City and Midland Bank. This structure will also be in Bridge-street, the main street of the town.

FIRES.

COLWYN BAY.—The Colwyn Bay Victoria Pier Pavilion has been completely demolished by fire.

DEWSBURY.—Damage to the extent of about £1,000 has been done by a fire which occurred at Mr. William Naylor's pawnbroking establishment, Webster Hill.

EDINBURGH.—Damage amounting to several thousands of pounds has been done by fire in the malting section of the Edinburgh and Leith Brewery, South Back Canongate, belonging to the Edinburgh United Breweries, Ltd.

FARNBOROUGH.—The "Butchers' Arms," Farnborough, Warwickshire, has been burned down.

GRIMSBY.—A fire has occurred at the premises of Messrs. T. Ogle & Co., timber merchants, Alexandra Dock.

STAFFORD.—The golf house at Milford, belonging to the Cannock Chase Golf Club, has been completely destroyed by fire.

SWANSEA.—Extensive damage has been done by fire to the shop of Mr. Saul, Morton-street, pawnbroker.

WIGSTON.—A serious fire has occurred at South Wigston by which Messrs. I. Harrison's Salt Works in Canal-street were gutted.

"STEEL CONCRETE."

A CORRESPONDENT of the *Manchester Guardian* states that a method whereby the surface of concrete is protected from wear and tear by a covering of metal has been devised by Dr. A. Kleinlogel, professor at the Darmstadt Engineering College, and is now being used by about twenty-five German firms.. The new process is stated to enable a homogeneous metal skin of any thickness desired, and of remarkable resistance to mechanical wear as well as to hydraulic pressure, to be applied to the concrete, which, moreover, effectively counteracts the production of any dust. Extensive tests at the workshops of the Stuttgart and Darmstadt engineering colleges have shown such "steel concrete," as it is termed, to possess greater hardness than any natural or artificial stone, while being absolutely free from dust. The new material has, for instance, been found to be eight times more efficient than the best mechanically-compressed artificial stone slabs for wear, while in a comparison with high-grade granite steel concrete, on an average of 30 tests, proved 2.2 times better.

The tensile and bending strength was found to be about twice as high as that of the best concrete, while the compression strength was 3 to 4 times higher, reaching as much as 630 kilogs. to the square centimetre. Steel concrete can accordingly be used for many purposes as a substitute for cast iron, whenever there is no need for providing the full compression strength of cast-iron, the more so as the new material can be worked with ordinary tools, being sawed and drilled, turned, filed, planed, and ground without any risk of breakage.

Special tests at the Darmstadt testing offices have shown a steel skin 5 mms. thick, applied by hand only, to stand a water pressure up to 14 atmospheres without any lack of tightness being noted. This absolute imperviousness to water is an especially desirable feature in concrete tanks. In experiments now being conducted the water pressure is even to be raised to 60 atmospheres. It has further been found that the steel concrete layer not only clings to fresh but also to old concrete. Moreover, the same skin can be applied with equal success to dead stone, such as granite, porphyry, syenite and sandstone, pumicestone, concrete, chamotte, and bricks, even to cork plates, without any harmful effect upon the juncture between the two materials. In the latter case, as well as with pumicestone concrete, the combination of a remarkable lightness and high strength will be found of especial value. A notable feature is the intimate adhesion of the metal skin to the material underneath. In breaking tests, on a granite staircase step coated with steel concrete, the latter could never be severed from the underlying stone.

NEW COMPANIES.

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 & 117, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

WEYMOUTH BRICK CO., LTD. (178,671). Registered December 24. 60, St. Edward-street, Leek. Nominal capital, £7,000.

PRIOR WATSON & CO., LTD. (178,446). Registered December 16. 3, Surbiton Park-terrace, Kingston, Surrey. Builders and contractors. Nominal capital, £3,000.

LUSTAL, LTD. (178,520). Registered December 20. 59–60, Chancery-lane, W.C. 2. Manufacturers and dealers in composition for absorbing dust, cleaning and disinfecting floor coverings. Nominal capital, £5,000.

H. J. & A. WRIGHT, LTD. (178,559). Registered December 21. Builders, builders' merchants, &c. Nominal capital, £8,000.

THOMAS HOLLOWAY (TIPTON), LTD. (178,614). Registered December 22. 73A, Toll End-road. Ocker-hill, Tipton. Builders and contractors, Nominal capital, £3,000.

THOMAS PICKUP & CO., LTD. (178,615). Registered December 22. 95A, Linaker-street, Southport, Lancashire. Joiner, builder and contractor. Nominal capital, £2,500.

JOHN WM. WILDGOOSE & SONS, LTD. (178,605). Registered December 22. Industrial Works, Rutland-street, Matlock. Builders and building contractors. Nominal capital, £25,000.

EASTERN COUNTIES TIMBER CO., LTD. (178,628). Registered December 23. 120, London-wall, E.C. 2. Nominal capital, £10,000.

J. HUGGETT & SON, LTD. (178,662). Registered December 24. Station-road, Belmont, Surrey. Stone and hardware merchants, builders and contractors. Nominal capital, £2,500.

HARRY J. LINZELL, LTD. (178,727). Registered December 30. Orwell-road, Felixstowe. Builders and contractors. Nominal capital, £8,100.

J. J. RAYMENT & SON, LTD. (178,751). Registered December 31. 4, Pont-street, Belgrave-square, S.W. Builders and decorators. Nominal capital, £6,000.

KITCHINGS' (BUILDERS), LTD. (178,754). Registered December 31. Central Chambers, Albion-street, Leeds. Stone and marble masons Nominal capital, £2,500.

LOVELACE LANGHAM & CO., LTD. (178,755). Registered December 31. 7, Wellington-street, Strand, W.C. 2. Building and roofing contractors, manufacturers and merchants. Nominal capital, £6,000.

HENRY FLACK, LTD. (178,768). Registered January 2. 264, Borough High-street, Southwark, S.E. Varnish, paint, enamel and french polish manufacturers. Nominal capital, £15,000.

S. JONES & SONS (DUNVANT), LTD. (178,800). Registered January 2. Penlan Brick Works, Dunvant, Swansea. Manufacturers and merchants of bricks, tiles, sanitary and other pipes, &c. Nominal capital, £12,000.

BRITISH ART POTTERY CO. (FENTON), LTD. (178,778). The Rialto Works, High-street, Fenton Stafford. Registered January 2. Earthenware manufacturers. Nominal capital £10,000.

GOWER SAWMILLS, LTD. (178,786). Registered January 2. Gower Saw Mills, Penclawdd, Glam. Nominal capital, £5,000.

S. DAVEY & CO., LTD. (178,799). Registered January 2. 4, Pavilion-buildings, Brighton, Sussex. Manufacturers of concrete products. Nominal capital, £3,500.

HARPER BROTHERS & CO., LTD. (178,787). Registered January 2. 13, St. Helen's-place, E.C.3. To undertake work in Spain or any other part in connection with power undertakings of any nature commonly undertaken by engineers, builders, and contractors. Nominal capital, £1,000.

G MAILE & SON, LTD. (178,845). Registered January 4. 367, Euston-road, N.W.1. Monumental sculptors, carvers, masons, and craftsmen in wood, marble, &c. Nominal capital, £5,000

PATENTS.

* APPLICATIONS PUBLISHED.

145,026.—Porzellanfabrik Kahla: Cement for joining porcelain bodies after burning.

146,813.—P. Mogel and H. O. Kurth: Apparatus for excavating clay.

149,980.—T. Finlayson: Casement-adjusters.

149,997.—F. E. M. Diard: Supports for bridges, cranes, scaffolding, mooring posts, and like appliances for lifting, carrying, or sustaining loads.

152,028.—I. Bohn: Cutting out of stone slabs or bricks from solid rock.

156,804.—A. T. Cavey: Bituminous roofing.

159,490.—O. T. Theodorsen: Wood joints.

170,962.—E. V. Gabriel (Soc. della Fabbrica di Tavveloni A. Orzali & Co.): Building beams or slabs.

170,985.—F. M. Sawyer: Wall construction.

171,042.—J. C. Gledhill and A. E. Gledhill: Reinforced concrete portable coppers.

171,144.—W. J. Mellersh-Jackson (American Aggregate Co.): Manufacture of an aggregate or material utilisable for making moulded articles, and the products obtained therefrom.

171,156.—W A Wilson: Sliding windows.

171,172.—D. E. Williams: Dry docks, locks, and like structures.

171,211.—J. Fowler & Co. (Leeds), Ltd; J. Fowler & Co. (Australia), Ltd.: Earth-excavators.

171,225.—F. H. Heaven: System of concrete hollow-wall construction.

171,298.—W. A. Parsons: Hasp fastening.

171,336.—A. W. Robinson and H. S. Marks: Locks for doors.

171,417.—J. Forster and P. McLachlan: Slab buildings structures.

171,455.—S. J. Adams and R. H. Adams: Locks for exit doors.

171,467.—E. B. Whalley: Method of and means for barking timber.

171,468.—A. Stapf and H. Hundrieser: Stone drills or augers.

171,511.—H. S. Hele-Shaw and E. Tribe: Pipe joints.

171,529.—W. H. Stevens: Concrete buildings.

171,541.—H. Wagner: Wall construction.

171,550.—H. Smith, J. Tullock and L. W. Low: Composition for heat insulation.

171,565.—H. Gill and T. Gill: Door handles.

171,568.—W. H. Stevens: Construction of conduit for drainage and similar purposes.

171,611.—G. A. Saville: Flushing-cisterns.

171,624.—L. S. A. Cullen: Concrete building-blocks and system of concrete building construction.

155,753.—E. Vanlaethem: Means for drying wood and other material.

171,629.—H. Russell: Domestic fire-grates.

171,714.—R. Jowett: Seats or chairs for cinemas, theatres, concert halls, and the like places of entertainment.

171,731.—S. Timings: Means for securing doors, French windows, and the like partly open.

171,854.—A. J. Wycherley: Locks.

153,293.—"Freeses Patent" Eisenschutz und Schraubenwellenbekleidung fur Schiffe Ges.: Coating composition for the preservation of wood, pasteboard, masonry, leather, sheet iron, fabric, and the like.

171,860.—G. Handley and P. W. Bullock: Means for raising water and other liquids by compressed air.

171,865.—W. C. Piggott, H. Piggott and Piggott Bros. & Co., Ltd.: Bay windows for caravans, tents, and other structures.

171,925.—T. E. Mansfield: Chair.

171,931.—K. R. Paterson: Sanitary cover for the seats of water closets.

171,938.—J. Clark and W. McGeoch & Co., Ltd.: Lock.

172,040.—Concrete Dwellings, Ltd., and P. Gray: Apparatus for casting concrete walls *in situ*.

***All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.**

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than Tuesday evening.

*Denotes *accepted.* † Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*

ABERDOVEY.—For alterations to the Dovey Hotel, Aberdovey, for the Dovey Hotel Co., Ltd. Mr. F. Howarth, architect and surveyor, Towyn :—

A. T. Arthur	£786 10
Hugh Lewis	650 0
*J. P. Lewis	617 0

ALFRETON.—For erection of picture theatre in High-street. Mr. John Tomlinson, architect and surveyor, Victoria-street, South Normanton :—

*S. Gee & Son, Ltd., Derby.

BELFAST.—For construction of reservoir and dam at Mourne Mountains, for the Belfast Water Commissioners :—

*S. Pearson & Son, Ltd., Westminster.... £1,035,000

BERMONDSEY.—For erection of receiving wards, mental wards, and motor garage at the Bermondsey and Rotherhithe Hospital, for the Guardians. Messrs. Newman & Newman, architects and surveyors, St. Thomas's Chambers, 24, Railway-approach, London Bridge, S.E.1 :—

Arthur H. Inns, Bishopsgate	£16,466
William Saint, Ltd., Cambridge	14,609
Geo. Everitt, Ltd., Croydon	14,090
Daley & Co., Acton	14,079
Thomas & Edge, Woolwich	13,775
Billings & Co., Oxford	13,616
Edwards Construction Co., Eltham	13,605
H. W. Spinks, Southwark	13,560
Thos. Shillitoe, Norwood	13,475
John Greenwood, Ltd., Southwark	13,391
W. Harbrow & Co., Bermondsey	13,329
Y. J. Lovell & Sons, London, W.	13,194
Henry Kent, Hither Green	12,986
R. Woolaston & Co., Limehouse	12,776
H. Lacey & Sons, Luton	12,519
R. Merton Hughes, Baron's Court	12,471
J. L. Woodhouse, Bromley	12,219
Laing & Sons, Ltd., London, W.C.	12,073
*R. Mansell, Croydon	11,988

BRYNCRUG.—For alterations and additions to Perthycutian, for Mr. J. Roberts. Mr. F. Howarth, architect, Towyn :—

*John Owen	£550

CHALTON.—For repairs and adaptations to farm house, buildings, gates and fences, for the Bedfordshire C.C. Small Holdings Committee. Mr. K. Gammell, A.R.I.B.A., architect, 17, St. Peter's-street, Bedford :—

W. Alban Richards & Co., Biggleswade	£1,125 9 0
S. Nichols, Copie	935 17 6
H. Lacey & Sons, Luton	866 0 0
W. Haynes, Sandy	668 11 0
*Y. J. Lovell & Son, Bedford	665 0 0

DERBY.—For alterations to the Children's Home, Mount-street :—

*A. Woodiwiss, Derby	£516

DEVIZES.—For erection of an examination-room and waiting-room, &c., at the Cottage Hospital. Mr. A. J. Randell, architect, 16, Market-place, Devizes :—

E. Raddon, Devizes	£495 0
H. A. Smith, Devizes	485 10
A. Smith & Son, Devizes	479 0
Offer & Son, Devizes	448 8
Blackford & Son, Calne	420 0
L. Maslen & Sons, Devizes	372 6
W. E. Chivers & Sons, Ltd., Devizes	340 0
F. Rendell & Sons, Devizes	330 0
*William Burbidge, Steeple Ashton	275 0

HEANOR.—For erection of 10 "B" type parlour houses, complete with fencing, footpaths and drainage, at Plumptre-terrace site, Langley Mill, for the U.D.C. Mr. A. G. Wheeler, architect, Eastwood. Quantities by Messrs. Baines, Booth & Richardson, Nottingham :—

E. E. Stevens, Loughton	£11,899 0 0
R. Whitehead, Sheffield	7,865 0 0
H. Sewell, Ilkeston	7,000 0 0
W. Walkerdyne, Ltd., Derby	6,870 0 0
E. Cobb, Ilkeston	6,749 0 0
S. Fryer, Derby	6,743 0 0
D. Roberts & Son, Ilkeston	6,266 0 0
Bosworth & Lowe, Nottingham	6,200 0 0
T. Woolten, Langley Mill	5,736 0 0
Harris & Hunt, Ripley	5,727 0 0
G. H. Pearson, Rotherham	5,720 0 0
Gaskin & Wilson, Ambergate	5,716 0 0
Stubbings & Fell, Sutton-in-Ashfield	5,537 0 0
F. Perks & Sons, Long Eaton	5,522 0 0
E. Morley & Sons, Derby	5,450 0 0
H. C. Clarke, Eastwood	5,410 0 0
W. Wood, Heanor	5,379 0 0
E. Allcock & Sons, Eastwood	5,199 0 0
J. Bush, Nottingham	5,198 16 0
J. Minkley, Barnsley	5,046 10 0
*Rowland Bros., Kimberley	4,999 4 2

HESTON AND ISLEWORTH.—For supply of Kentish pit flints to the U.D.C. :—

*J. Horsford & Co.	9s. 7d. per cubic yard
W. Wood & Co.	9s. 6d. per cubic yard

H.M. OFFICE OF WORKS.—Accepted during February :—

Building Works, &c.—Accrington P.O.—Painting: Hyett Bros., Gloucester. Blyth—Plumbing, &c.: T. Poulter, Blyth. Painting, &c.: J. H. Findlay, Blyth. Bradford—Works and Repairs: P. Higson, Bradford. Brighton Sorting Office—Excavations, &c.: The Building Guild, Ltd., Manchester. Broadmoor Asylum—Plumbing: P. A. Claremont, Crowthorne. Carmarthen Post Office—Alterations: Rees Davies, Carmarthen. Coventry Sorting Office—Slating: W. J. & R. Wormell, Coventry. Durham—Plumbing: J. Laidler & Sons, Durham. Eastbourne Post Office—Asphalting: T. Faldo & Co., Ltd., London, W.C. Concrete Steps: F. Bradford & Co., London, E. Hove Houses—Slating: John Williams & Co., London, S.E. Ilkeston Post Office—Granolithic Paving: The Empire Stone Co., London, W.C. Kew Insurance Office—Asphalting: Mastic Roofing and Paving Co., London, E.C. Leeds Employment Exchange—Brick, &c., Works: T. Campion & Son, Manchester. Plumbing: A. Longworth & Sons, Manchester. Leicester Employment Exchange—Alterations: F. Garner & Son, Leicester. Erection: Chitham & Co., Ltd., Leicester. Manchester (Rusholme) Garage—Painting: C. Bell, Manchester. Plumbing, &c.: E. & H. Scarlett, Manchester. Steelwork: Banister, Walton & Co., Ltd., Manchester. Middlesbrough—Painting: W. L. Taylor & Co., Middlesbrough. Plastering: Smiles & Dawson, Middlesbrough. Plumbing: T. B. Watson & Son, Ltd., Middlesbrough. Mount Pleasant—Reglazing Roof: H. Hope & Sons, Ltd., London, W. Partick Employment Exchange—Erection: T. Henderson, Glasgow. Queensferry—Conversion of Hostels: A. Heatherley & Co., Sheffield. Richmond Houses—Slating: A. W. Allard, London, S.W. St, Anne's-on-Sea Post Office—Granolithic: J. Ellis & Sons, Leicester. Seaforth Wireless Station—Extension: A. Lloyd, Liverpool. Sheffield Post Office—Loading Platform: T. Wilkinson & Sons, Sheffield. South Kensington Pottery School—Alterations: Wm. Walkerdine, Ltd., London, W. Teddington Laboratory—Additional Story: F. D. Hidden & Co., Ltd., London, W. Wednesbury Employment Exchange—Alterations: W. B. & F. T. Archer, Birmingham. Westminster Offices—Drainage: Holland & Hannen & Cubitts, Ltd., London, W.C. Windsor Telephone Exchange—Steelwork: A D. Dawnay & Sons, Ltd., London, S.W. Yiewsley Houses—Plastering: C. Peppiatt, London, W.

Engineering Services.—Bethnal Green Houses—Electric Wiring: Tredegars, Ltd., London, W. Frimley Sanatorium—Electric Wiring: The Alpha Manufacturing Co., London, S.W. Laundry Machinery: James Armstrong & Co., Ltd., London, E.C. Glasgow Inland Revenue Offices—Heating: C. F. Howden, Glasgow. Teddington Laboratory—Electric Lift: Wm. Wadsworth & Sons, Bolton. Storage Battery: The Chloride Electrical Storage Co., Ltd., London, S.W.

Painting.—P. & W. Anderson, Ltd., London, W.; Bargmans, Ltd., London, E.C.; Brazier & Sons, Ltd., Southampton; H. D. Ebbutt, Croydon; T. J. Gabb Ltd., London, E.C.

HULL.—Provision of automatic telephone exchange, for the T.C. :—

*Western Electric Co.	£2,237 10

KITTYBREWSTER.—For erection of enclosing walls, railings and fences, laying water supply, &c., at the playing fields and tennis courts at Hilton, for the National Committee for Training Teachers. Mr. J. A. O. Allan, architect, 25, Union-terrace, Aberdeen :—

*W. Tawse, Aberdeen—*Earthwork.*	
*D. Main & Son, Aberdeen—*Mason.*	
*J. J. Johnston, Aberdeen—*Plumber.*	
*W. D. Forbes & Co., Aberdeen—*Carpenter.*	
*J. Scott & Son, Aberdeen—*Concrete.*	
*G. Bisset & Son, Aberdeen—*Blacksmith.*	
*Harper & Co., Aberdeen—*Wire work.*	
*J. & G. Rennie, Aberdeen—*Painter.*	
Total	£7,953 6 11

LEWISHAM.—For 900 yds. of wood block paving at Lewisham Hospital, S.E.13, for the Guardians. Mr. W. R. Owen, Clerk to the Guardians, 394, High-street, Lewisham, S.E.13 :—

*Improved Wood Pavement Co., Ltd., London	£450 11 6

LONDON.—Supply and erection of cast-iron convenience, for the Lambeth B.C. :—

*Allen Senior & Co., Ltd., Glasgow	£152 11 9
Macfarlane & Co., Ltd., Glasgow	174 14 0

LONDON.—For supplies to the Bethnal Green B.C. :—

*Cement Marketing Co.—Portland cement, £3 10s. 6d. per ton; grey stone lime, £3 1s. per ton.
*John Byford & Son—Blue lias lime, £2 16s. 6d. per ton.
*C. & A. Knifton—Unscreened Thames ballast, 11s. 6d. per yard; Thames sand, 16s. per yard; Thames shingle, 16s. per yard.
*B. Goodman—Crushed ballast, 18s. per yard.
*W. S. Bartlett—Fletton bricks, £3 9s. per 1,000; best blue Staffordshire, £10 18s.; blue Staffordshire stable bricks, £10 19s.
*Young & Son—Blue Staffordshire stable bricks, £10 16s. per 1,000.
*W. Griffiths & Co.—Broken Guernsey granite: 2 in., £1 8s. 5d. per ton unloaded on wharf; 1½ in., £1 8s. 5d.; 1 in., £1 5s. 5d.; ¾ in., £1 5s. 5d.; dust, 18s. 5d.
*S. Marshall & Sons—Natural York paving, £8 0s. 8d. per 100 super feet delivered to station.
*Hard York Nonslip Stone Co.—"Nonslip" paving, 12s. 6d. per yard super.
*Val de Travers Asphalte Paving Co.—1 in. mastic, 8s. 9d. per yard super; 1½ in. compressed, 13s. 3d.; 2 in. compressed, 16s. for areas in the aggregate exceeding 20 yards; for smaller areas 10s. 3d., 14s., and 17s., respectively.

LONDON.—Repainting of sub-station, Edwards-lane, and engine-house, Milton-road, for the Stoke Newington B.C. :—

*S. Goodall & Son	£349

LONDON.—For hot-water installation at Maternity Home, for the Hammersmith B.C. :—

Young, Austen & Young	£220 10
W. J. Burroughes	182 0
Benham & Sons	168 0
Strode & Co.	168 0
W. Stainton	160 0
*Rosser & Russell	123 10

LONDON.—For repair of houses at Brixton works, for the Metropolitan Water Board :—

W. J. Sidey	£268 0
Bradshaw & Bradshaw	248 18
H. Groves	245 0
*Somerford & Son	233 0

CARLTON.—For 24 houses (10 non-parlour and 14 parlour type), including house drains and fences, for the U.D.C. Mr. J. A. West, engineer and surveyor, Carlton, near Nottingham :—

	PARLOUR TYPE.			LIVING-ROOM TYPE.		
	Pairs, South (4), per house.	Blocks of 4, North (8), per house.	Pairs, North (4), per house.	Blocks of 4, North (4), per house.	Blocks of 4, South (4), per house.	Pair, North (2), per house.
A. L. & H. W. Chown	£595 0 0	£625 0 0	£630 0 0	£560 0 0	£550 0 0	£530 0 0
Scott & Sons	590 0 0	583 0 0	590 0 0	497 0 0	497 0 0	500 0 0
H. & C. Oliver	573 11 8	575 12 2	585 6 0	—	—	—
Building Guild	564 3 5	528 15 2	533 16 9	555 10 11	500 5 11	512 18 0
J. Hobson & Sons	523 0 0	508 0 0	487 0 0	472 0 0	493 0 0	484 0 0
J. Blank (Lincoln)	500 0 0	500 0 0	500 0 0	470 0 0	470 0 0	470 0 0
H. A. Lowe	—	—	—	480 0 0	489 0 0	—
Colwick Building Co.	504 0 0	492 0 0	486 0 0	468 0 0	436 0 0	450 0 0
Brooks Bros.	495 10 0	510 15 0	522 0 0	420 15 0	420 15 0	— —
J. Caunt & Co.	—	—	492 0 0	498 0 0	—	—
A. H. Aulsebrook	486 10 0	490 10 0	493 0 0	450 0 0	458 0 0	460 0 0
H. Brackenbury	—	547 0 0	557 0 0	454 0 0	454 0 0	485 0 0
Loach & Freeston	500 0 0	495 0 0	510 0 0	425 0 0	430 0 0	420 0 0
C. G. Ward	494 4 5	484 7 1	492 12 9	453 16 4½	459 13 10	434 13 3
*G. Wainer	—	*447 10 6	*449 15 0	—	—	—
*J. Coppin & Son	*451 0 0	—	—	*415 0 0	*415 0 0	*415 0 0

HESTON AND ISLEWORTH.—Supply of road materials to the U.D.C. :—

Name of Tenderer.	Price delivered Isleworth Dock. Per ton. 2 in.	Per ton. 1½ in.	Per cubic yd. 2 in.	Per cubic yd. 1½ in.	Price delivered Hounslow, L. & S.W. Rly. Per ton. 2 in.	Per ton. 1½ in.	Per cubic yd. 2 in.	Per cubic yd. 1½ in.
GRANITE.								
Brookes, Ltd.	—	—	32/8	—	—	—	—	—
Brotherton-Ratcliffe & Co., Ltd.	—	—	32/6	—	—	—	—	—
Boon's Granite Quarries, Ltd.	—	—	—	—	—	—	26/3	—
The Clee Hill Granite Co., Ltd.	—	—	—	—	25/11	25/5	—	—
Cliff Hill Granite Co., Ltd.	—	—	—	—	25/11	—	—	—
Enderby and Stoney Stanton Granite Co., Ltd.	—	—	—	—	26/2	—	—	—
*De Lank Elvan Co., Ltd.	—	—	—	—	25/7	25/1	—	—
William Griffiths & Co., Ltd.	—	—	32/0	—	—	—	—	—
Jee's Hartshill Granite & Brick Co., Ltd.	—	—	—	—	24/5	—	—	—
C. H. McGuinness & Co., Ltd.	—	—	33/9	—	—	—	—	—
O. Mitchell	27/0	27/6	—	—	28/6	29/0	—	—
Montsorrel Granite Co., Ltd.	—	—	—	—	26/2	—	—	—
Manod Granite Co., Ltd.	—	—	—	—	—	—	30/0	—
A. & F. Manuelle, Ltd.	—	—	31/9	32/3	—	—	—	—
*Mowlem & Co., Ltd.	—	—	28/11	—	—	—	—	—
Rowley Regis Granite Quarry, Ltd.	—	—	—	—	25/6	—	—	—
Tom Bros.	—	—	—	—	23/11	—	—	—
Tytherington Stone Co.	—	—	—	—	20/4	—	—	—
Tresarett Quarry Co., Ltd.	—	—	—	—	23/10	23/4	—	—
Croft Granite Co.	—	—	26/0	—	—	—	—	—
Chanwood Granite Co., Ltd.	—	—	—	—	26/2	—	—	—
Scatter Rock Macadams, Ltd.	—	—	—	—	—	—	31/0	—

LONDON.—Supply of paints, varnishes, &c., to the Metropolitan Water Board :—

Items 1 to 10 (colours, ground in oil), Pilchers, Ltd.; 11 to 15 (colours, dry), Burrell & Co., Ltd.; 16 to 18 (sundries), Burrell & Co., Ltd.; 19 (white lead), Champion, Druce & Co.; 21, 22, 24, 27 and 31 (varnishes), Burrell & Co., Ltd.; 23, 26 and 30 (varnishes), Pilchers, Ltd.; 32 (American turps), White Sea & Baltic Co. (P. & I. Danischewsky, Ltd.); 33 and 34 (linseed oil), British Emaillite Co., Ltd.

LONDON.—Supply of three sets of "Venturi" meter tubes, recording apparatus, &c., for the intake at Littleton, for the Metropolitan Water Board :—

*Geo. Kent, Ltd.	£2,991

LONDON.—Repairs to 35 and 37, Brookmill-road, Deptford, for the Metropolitan Water Board :—

W. J. Sidey	£290
Bradshaw & Bradshaw	260
Somerford & Son	220
*H. Groves	168

MONIFIETH.—For reconstruction of Maule-street, and part of Ferry-road, and construction of a sewer in Maule-street, for the T.C. Mr. C. A. Mackenzie, Burgh Surveyor, Monifieth. Quantities by Surveyor :

J. Percy Trentham, Ltd., Edinburgh	£7,142	0	0
Wm. Wilson & Co., Glasgow	4,699	0	0
Thomsons, Ltd., Glasgow	4,079	0	0
Crowley, Russell & Co., Ltd., Glasgow	3,809	0	0
David Horsburgh, Dundee	3,731	0	0
McCreath, Taylor & Co., Glasgow	3,723	0	0
William Thomson, Strathaven	3,517	0	0
Chas. Dick, Junr., Monifieth	3,499	0	0
North of Scotland Transport Co., Ltd., Montrose	3,199	0	0
*Tulloch & Strachan, Dundee	2,986	1	4

PONTEFRACT.—For rebuilding "Blackmoor Head" Inn, for the Leeds & Wakefield Brewery Co., Ltd. Messrs. Garside & Pennington, architects and surveyors, Pontefract. Quantities by architects :—

C. Martin, Ltd., York	£4,872	6	1
Wm. Horner, Pontefract	4,780	16	0
A. Robinson, Idle	4,756	15	7
*B. Pumfrey & Co., Ltd., Gainsborough	4,291	9	9

RISCA (MON.).—For erection of 50 houses on the Ty Isaf Estate. Type 1, class "A," 18 houses; type 2, class "A," 12; type 3, class "B," 8; type 4, class "B," 12 houses, for the U.D.C. Mr. A. J. Dardis, Surveyor and Engineer, Council Offices, Risca, Mon. :—

*Unit Construction Co., Ltd., Birmingham	£21,570

RUGBY.—For alterations, repairs and painting at Benn Buildings, High-street, Rugby, for the U.D.C. Mr. J. H. Sharp, surveyor, Benn Buildings, High-street, Rugby. Quantities by surveyor :—

Parnell & Son, Rugby	£716	0	0
Foster & Dicksee, Rugby	698	0	0
Walton & Son, Rugby	612	0	0
A. L. & H. W. Chown, Northampton	566	2	6
*Linnell & Son, Rugby	518	18	9

RYDE.—Supply of 1,500 tons of granite to the T.C. :—

*Brookes, London	£1 7 3 per ton

Obituary.

The death has occurred of Mr. Arthur Stockwell, of Gosforth, architect and surveyor, who had practised in Newcastle for many years. Mr. Stockwell had been a member of the Gosforth U.D.C. for some twenty years, and had been Chairman of that authority. He was in his sixty-eighth year.

Mr. Robert Luther Roberts, builder and contractor, of Llandudno, died suddenly on Monday last week. Deceased erected a number of prominent buildings in the district, including the Llandudno Town Hall.

Last week the death occurred of Mr. Peter Anderson, J.P., in his seventy-fifth year. Deceased was Chairman of the Glasgow building firm of P. & W. Anderson, Ltd., who have carried out many important contracts at Glasgow, Gretna, and elsewhere.

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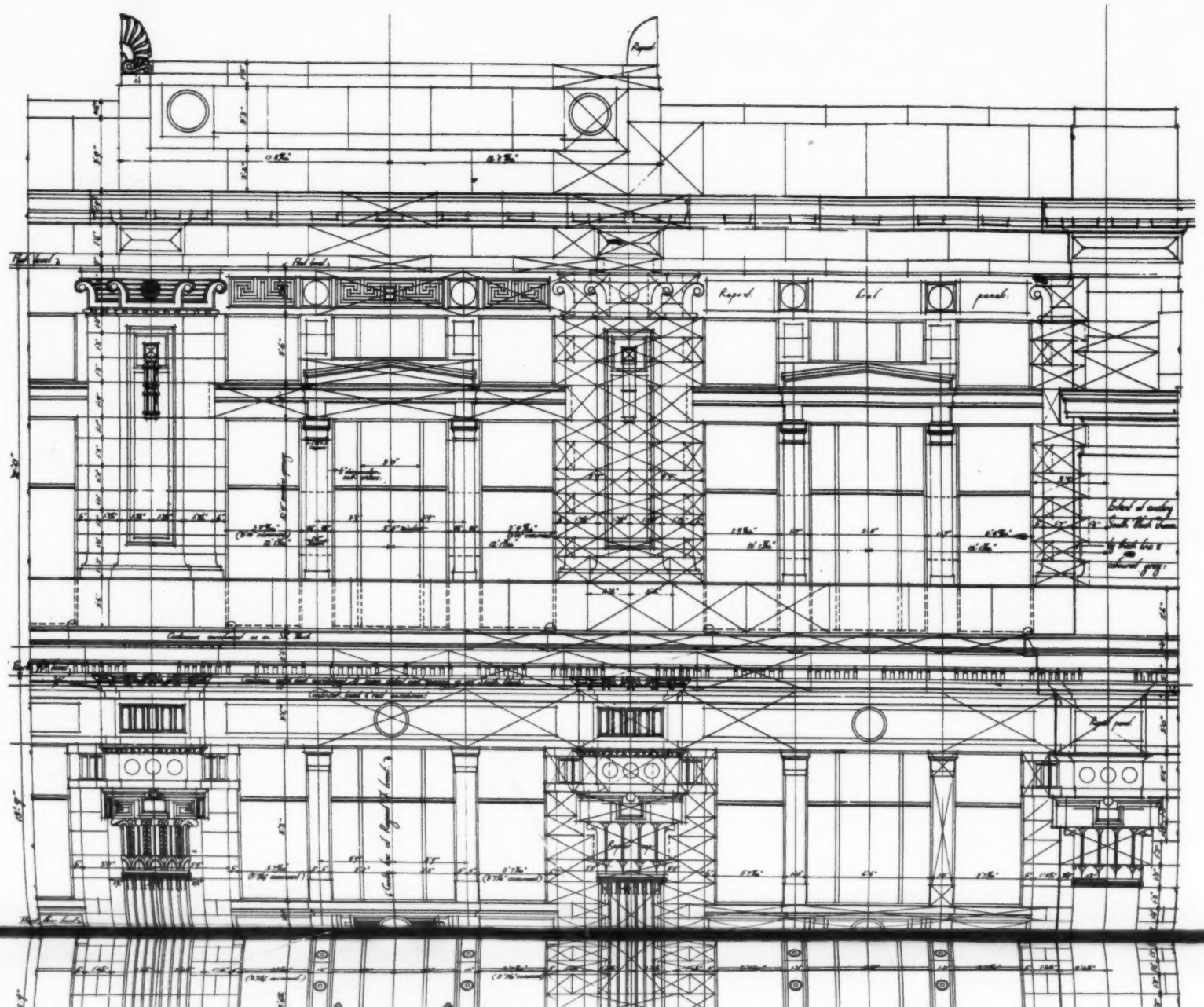
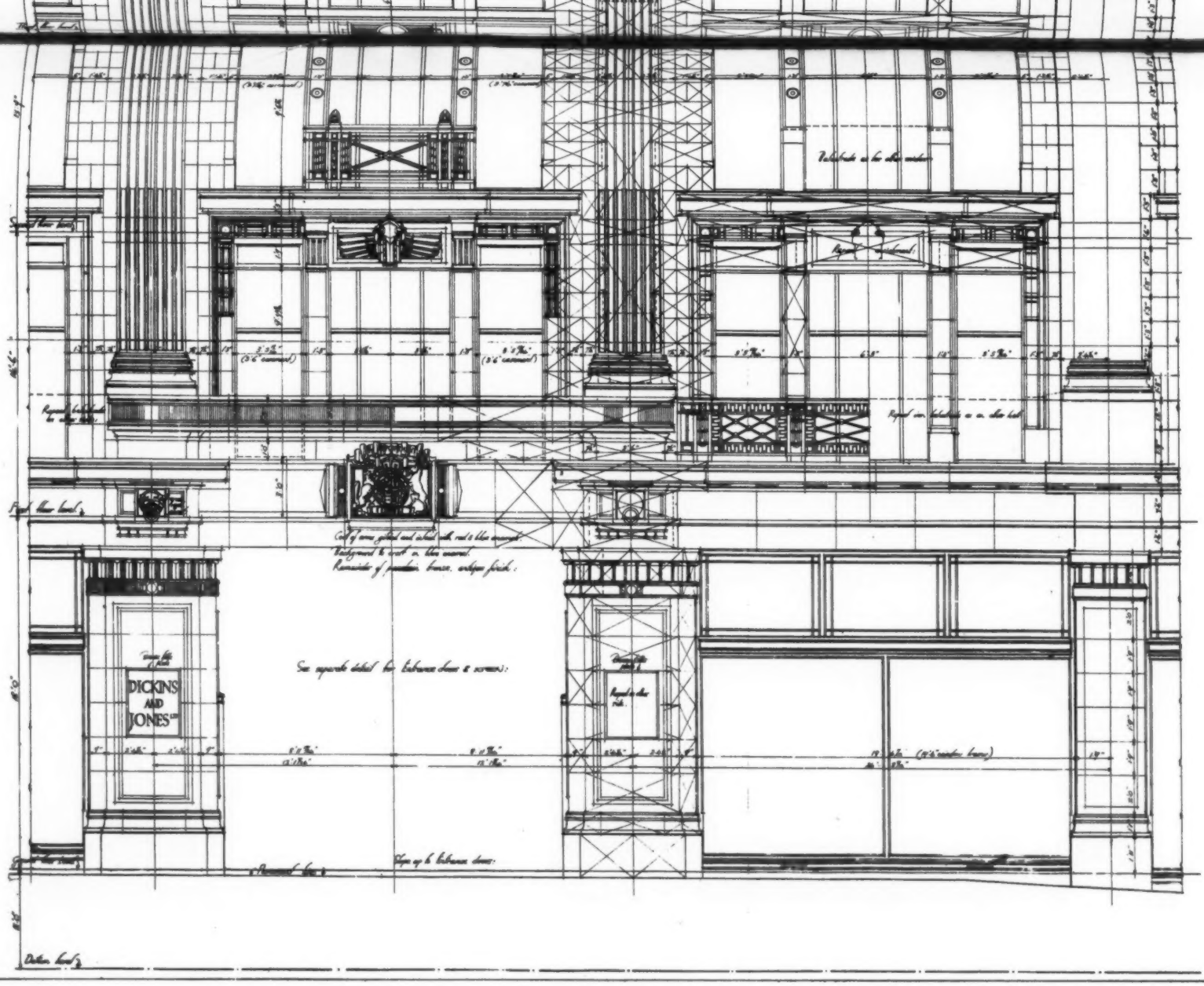


BUILDER, JI 1922.



NEW PREMISES FOR MESSRS. DICKINS & JONES, REGENT STREET.

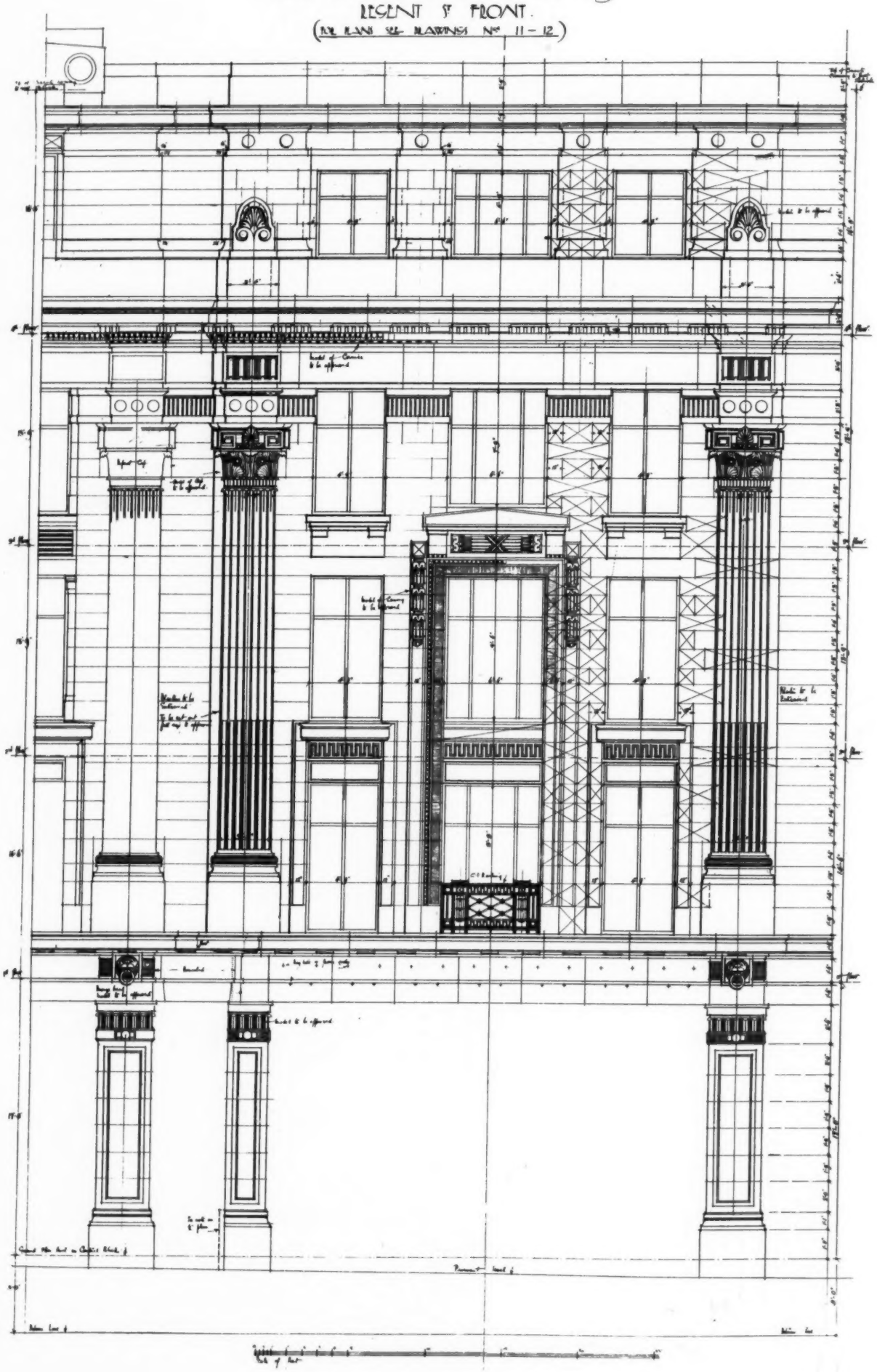
MESSRS. HENRY TANNER, ARCHITECTS.

DICKINS & JONES.

HALF INCH ELEVATION OF END BAY

REGENT ST FRONT.

(FOR PLANS SEE DRAWINGS Nos 11 – 12.)

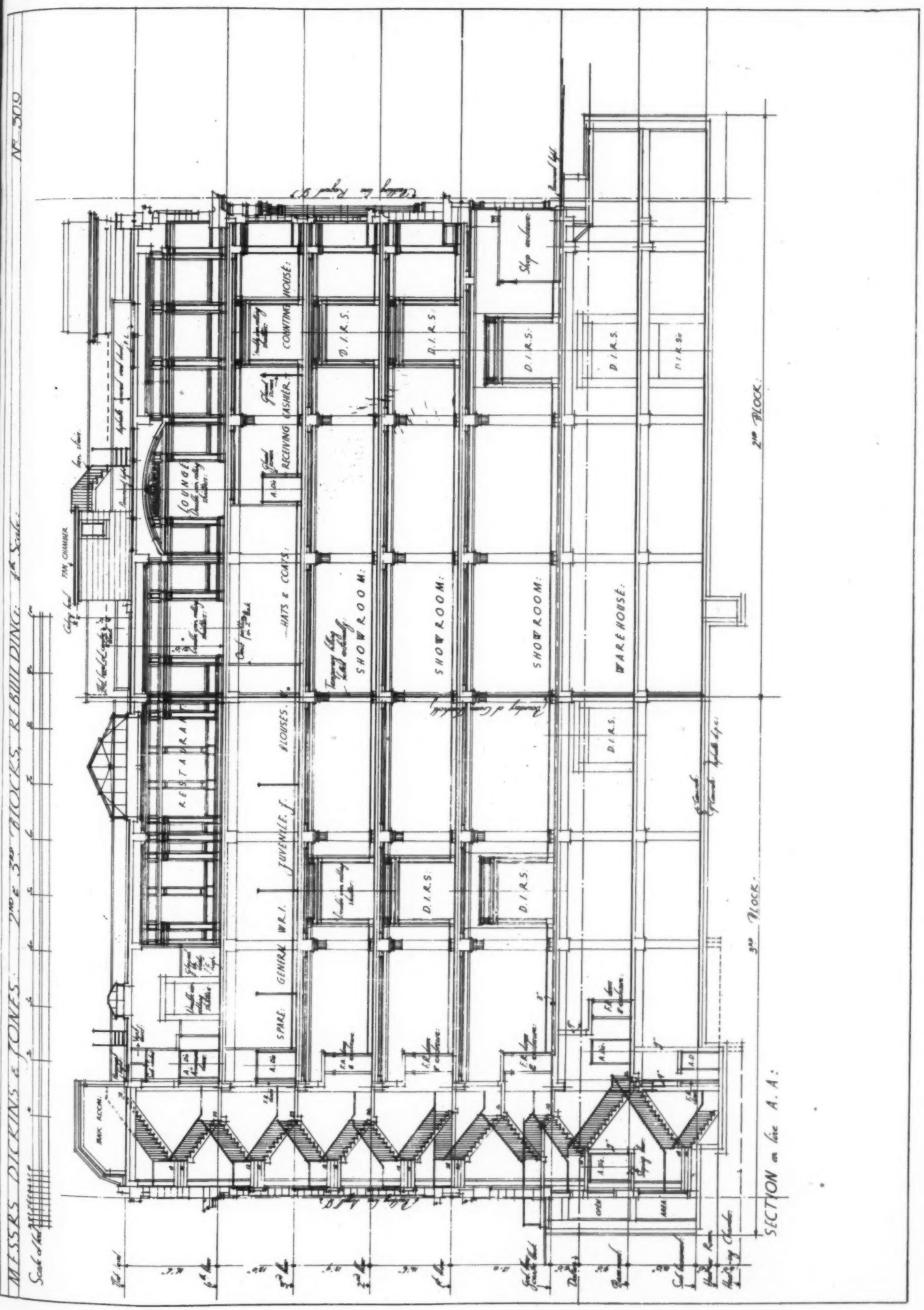


NEW PREMISES FOR MESSRS. DICKINS & JONES, REGENT STREET.

MESSRS. HENRY TANNER, ARCHITECTS.

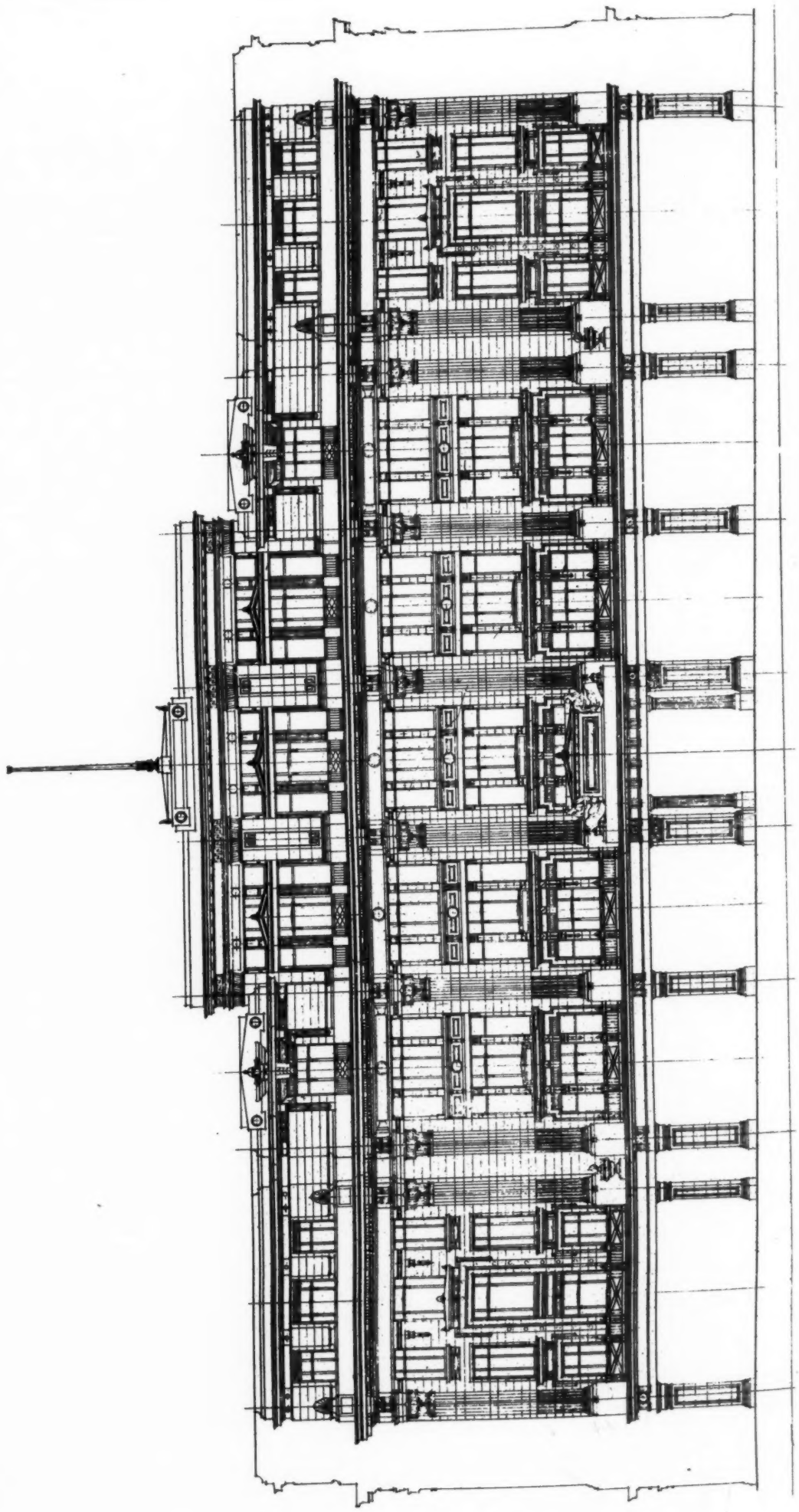
MESSRS DICKINS & JONES. 2nd & 3rd BLOCKS, REBUILDING. No 309

Scale of Ho



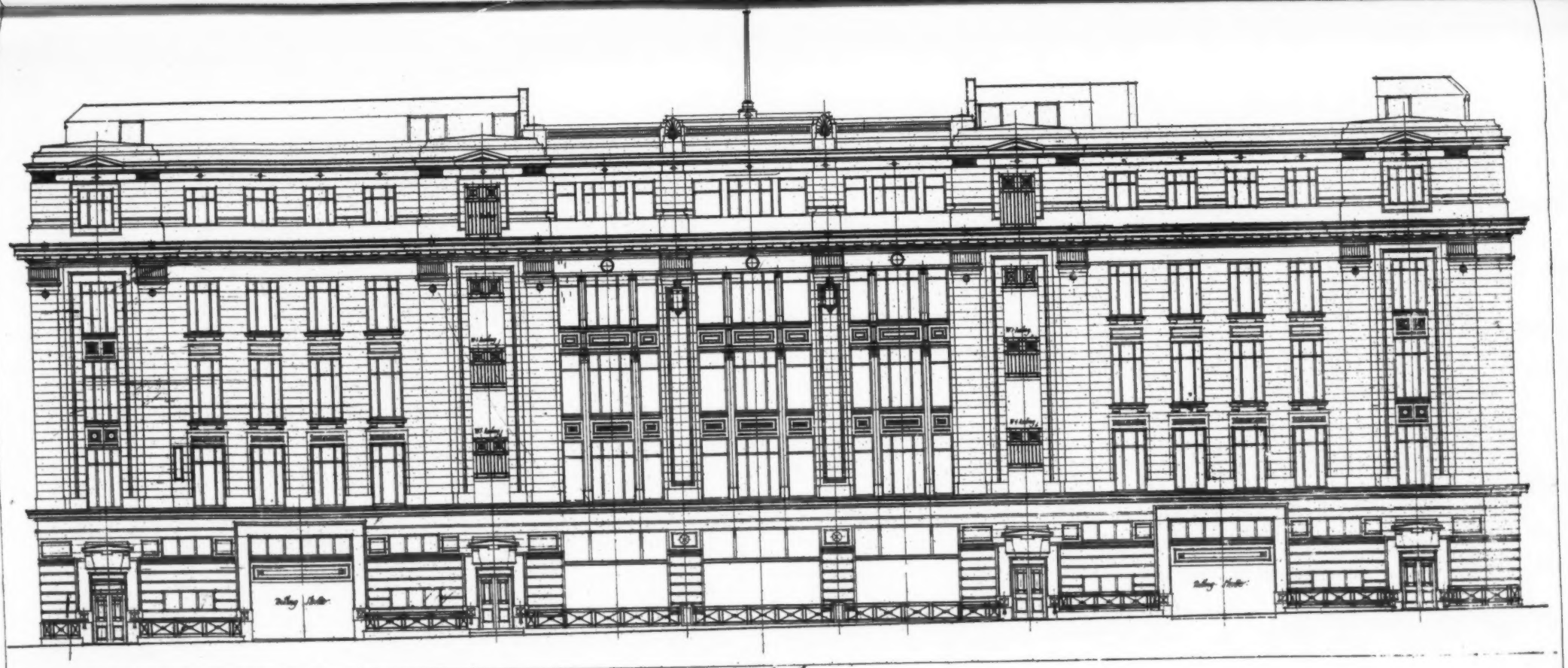
NEW PREMISES FOR MESSRS. DICKINS & JONES, REGENT STREET.

MESSRS. HENRY TANNER, ARCHITECTS.



REGENT STREET ELEVATION.

REGENT STREET ELEVATION.



Datum Line.

ELEVATION to ARGYLL STREET

Scale of 1/8 inch to 1 foot.

NEW PREMISES FOR MESSRS. DICKINS & JONES, REGENT STREET.

MESSRS. HENRY TANNER, ARCHITECTS.